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REPORT OF THE COMMISSIONERS OF THE GENERAL LAND OFFICE

Volume I.

REPORT

ROYAL COMMISSION

THE MEANS OF LOCOMOTION
AND TRANSPORT IN LONDON.

LONDON: H.M.S.O. 1963. Pp. 200. 10s. 6d.

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Volume I.

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R E P O R T

OF THE

ROYAL COMMISSION

APPOINTED TO INQUIRE INTO AND REPORT UPON

THE MEANS OF LOCOMOTION AND TRANSPORT IN LONDON.

Presented to both Houses of Parliament by Command of His Majesty.



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ROYAL COMMISSION UNDER HIS MAJESTY'S
ROYAL SIGN MANUAL.

Whitehall, February 10, 1903.

The KING has been pleased to issue a Commission under His Majesty's Royal Sign Manual to the following effect :—

EDWARD, R. & I.

Edward the Seventh, by the Grace of God, of the United Kingdom of Great Britain and Ireland and of the British Dominions beyond the Seas, King, Defender of the Faith, to—

Our trusty and well-beloved Sir David Miller Barbour, Knight Commander of Our Most Exalted Order of the Star of India, Knight Commander of Our Most Distinguished Order of Saint Michael and Saint George, Chairman ;

Our right trusty and right well-beloved Cousin Frederick Archibald Vaughan, Earl Cawdor ;

Our right trusty and well-beloved Cousin Charles George, Viscount Cobham ;

Our right trusty and well-beloved Councillor Thomas, Baron Ribblesdale ;

Our right trusty and well-beloved Councillor Sir Joseph Cockfield Dimsdale, Baronet, Knight Commander of the Royal Victorian Order ;

Our trusty and well-beloved Sir John Poynder Dickson-Poynder, Baronet, Companion of the Distinguished Service Order ;

Our trusty and well-beloved Sir Robert Threshie Reid, Knight Grand Cross of Our Most Distinguished Order of Saint Michael and Saint George ;

Our trusty and well-beloved Sir John Wolfe Wolfe-Barry, Knight Commander of Our Most Honourable Order of the Bath ;

Our trusty and well-beloved Sir Francis John Stephens Hopwood, Knight Commander of Our Most Honourable Order of the Bath, Companion of Our Most Distinguished Order of Saint Michael and Saint George, Permanent Secretary to the Board of Trade ;

Our trusty and well-beloved Sir George Christopher Trout Bartley, Knight Commander of Our Most Honourable Order of the Bath ;

Our trusty and well-beloved Charles Stewart Murdoch, Esquire, Companion of Our Most Honourable Order of the Bath, one of the Assistant Under Secretaries to Our Principal Secretary of State for the Home Department ;

Our trusty and well-beloved Felix Otto Schuster, Esquire ; and

Our trusty and well-beloved George Stegmann Gibb, Esquire, General Manager of the North Eastern Railway ; Greeting !

Whereas We have deemed it expedient that a Commission should forthwith issue to inquire into the means of locomotion and transport in London, and to report :—

(a) As to the measures which the Commission deem most effectual for the improvement of the same by the development and inter-connexion of Railways and Tramways on, or below, the surface ; by increasing the facilities for other forms of mechanical locomotion ; by better provision for the organization and regulation of vehicular and pedestrian traffic, or otherwise.

(b) As to the desirability of establishing some authority or tribunal to which all schemes of Railway or Tramway construction of a local character should be referred, and the powers which it would be advisable to confer on such a body.

Now know ye, that We, reposing great trust and confidence in your knowledge and ability, have authorised and appointed, and do by these presents authorize and appoint, you, the said Sir David Miller Barbour ; Frederick Archibald Vaughan, Earl Cawdor ; Charles George, Viscount Cobham ; Thomas, Baron Ribblesdale ; Sir Joseph Cockfield Dimsdale ; Sir John Poynder Dickson-Poynder ; Sir Robert Threshie Reid ; Sir John Wolfe Wolfe-Barry ; Sir Francis John Stephens Hopwood ; Sir George Christopher Trout Bartley ; Charles Stewart Murdoch ; Felix Otto Schuster ; and George Stegmann Gibb, to be Our Commissioners for the purposes of the said inquiry.

And for the better effecting the purposes of this Our Commission, We do by these presents give and grant unto you, or any five or more of you, full power to call before you such persons as you shall judge likely to afford you any information upon the subject of this Our Commission ; and also to call for, have access to and examine all such books, documents, registers and records as may afford you the fullest information on the subject, and to inquire of and concerning the premises by all other lawful ways and means whatsoever.

And We do by these presents authorize and empower you, or any five or more of you, to visit and personally inspect such places as you may deem it expedient so to inspect for the more effectual carrying out of the purposes aforesaid.

And We do by these presents will and ordain that this Our Commission shall continue in full force and virtue, and that you Our said Commissioners, or any five or more of you, may from time to time proceed in the execution thereof, and of every matter and thing therein contained, although the same be not continued from time to time by adjournment.

And We do further ordain that you, or any five or more of you, have liberty to report your proceedings under this Our Commission from time to time if you shall judge it expedient so to do.

And Our further will and pleasure is that you do, with as little delay as possible, report to Us under your hands and seals, or under the hands and seals of any five or more of you, your opinion upon the matters herein submitted for your consideration.

And for the purpose of aiding you in your inquiries We hereby appoint Our trusty and well-beloved Lynden Livingston Macassey, Esquire, Barrister-at-Law, to be Secretary to this Our Commission.

Given at Our Court at Saint James's, the ninth day of February, one thousand nine hundred and three, in the third year of Our Reign.

By His Majesty's Command,

A. AKERS-DOUGLAS.

The Commission, at its first meeting, adopted the short title of:—

THE ROYAL COMMISSION ON LONDON TRAFFIC.

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OF THE
ROYAL COMMISSION ON LONDON TRAFFIC
And Volumes accompanying the Same.

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AND PLANS.

VOLUME II.—MINUTES OF EVIDENCE TAKEN BY THE ROYAL COMMISSION ON LONDON
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VOLUME III.—APPENDICES TO THE EVIDENCE TAKEN BY THE ROYAL COMMISSION ON
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VOLUME IV.—APPENDICES TO THE REPORT OF THE ROYAL COMMISSION ON LONDON
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VOLUME V.—MAPS AND DIAGRAMS FURNISHED TO OR PREPARED BY THE ROYAL
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VOLUME VI.—MAPS AND DIAGRAMS FURNISHED TO THE ROYAL COMMISSION ON
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VOLUME VII.—REPORT TO THE ROYAL COMMISSION ON LONDON TRAFFIC BY THE
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REPORT.

REPORT

TO THE KING'S MOST EXCELLENT MAJESTY.

MAY IT PLEASE YOUR MAJESTY,

WE, the undersigned Commissioners, appointed to inquire into and report upon the means of locomotion and transport in London, humbly submit to your Majesty the following Report :—

PRELIMINARY.

1. The Orders which we received from Your Majesty directed us to report :—

“(a) As to the measures which we deem most effectual for the improvement of the same by the development and inter-connexion of Railways and Tramways on, or below, the surface ; by increasing the facilities for other forms of mechanical locomotion ; by better provision for the organization and regulation of vehicular and pedestrian traffic, or otherwise.

Instructions to the Commission.

“(b) As to the desirability of establishing some authority or tribunal to which all schemes of Railway or Tramway construction of a local character should be referred, and the powers which it would be advisable to confer upon such a body.”

2. For the purpose of carrying out these instructions we held 112 meetings and examined orally 134 witnesses. The Chairman and four other Members of the Commission (Lord Ribblesdale, Sir John Dickson-Poynder, Bart., D.S.O., M.P., Sir George C. T. Bartley, K.C.B., M.P. and Sir George S. Gibb), together with Mr. Lynden Macassey, the Secretary, visited the United States of America in September 1903, and examined the means of locomotion and transport in the Cities of New York, Boston, Philadelphia and Washington. A report on the results of their inquiry, with a portion of the oral evidence taken by them, and of the documentary evidence which they obtained, is included in Appendix A in Volume IV, accompanying this Report. Sir John Dickson-Poynder and Sir George C. T. Bartley also prepared separate memoranda on the results of their visit to the United States, which will be found in Appendices B and D, respectively, in Volume IV.

Procedure followed in the Inquiry

In the autumn of 1904 Sir George C. T. Bartley visited the cities of Vienna, Buda Pest, Prague, Cologne, Dresden, Berlin, Brussels and Paris, and prepared a report on their systems of urban locomotion, which is printed in Appendix E in Volume IV.

3. There is no finality in the question of the best means of locomotion and transport for great Cities ; and, in the case of London, it is necessary, in a very special degree, that the problem should be considered, in the first instance, on broad and general lines, and that, subsequently, a series of separate and distinct inquiries should be undertaken in order to deal with particular branches of the subject. Continuous attention is required in order to ensure that the practical measures, which these inquiries may show to be expedient, shall be brought into harmony with each other and with a general plan, as well as to provide the means of meeting new wants, and to take advantage of fresh scientific discoveries affecting the provision of the means of locomotion and transport.

Continuous attention necessary.

involving the establishment of a permanent body.

Appointment of Advisory Board of Engineers.

Nature of Commission's Inquiry.

For these and other reasons, which we shall state at greater length hereafter, we have come to the conclusion that the appointment of a permanent body to deal with questions of London locomotion is expedient. The constitution of the new authority, and the powers which it should possess, could not, however, be satisfactorily determined without a full examination of the nature of the problem, and some inquiry into the merits of the suggestions we received. In this view of the question, we have not merely taken evidence of a general character, but we have, by a special arrangement, obtained expert and technical advice on certain matters of primary importance. One of the Members of the Commission, Sir John Wolfe Wolfe-Barry, K.C.B., Past-President of the Institution of Civil Engineers, undertook to act on and preside over the Advisory Board of Engineers whom we consulted, and we were fortunate to obtain the services of Sir Benjamin Baker, K.C.B., K.C.M.G., Past-President of the Institution of Civil Engineers, and Mr. William Barclay Parsons, M.Inst. C.E., Chief Engineer to the Board of Rapid Transit Railroad Commissioners of the City of New York, who was well acquainted with London.

We think it right to say, at the outset, that we have not attempted to pass judgment upon the projects of particular promoters that have been or are before Parliament, or to discuss their relative merits: we do not understand that we are authorised to do so by the terms of our Commission, and, in any case, we could not satisfactorily pronounce upon such matters, involving as they do, private as well as public interests, without the same detailed assistance from counsel and witnesses that is given to Select Committees of Parliament.

The statistics and information we have collected, and the evidence we have taken, have necessarily occupied a long time, but will facilitate the labours of those who may take up the problem at the point where our investigation stops.

From this point of view we desire to call special attention to the valuable report we have received from the Advisory Board of Engineers. The instructions which we issued to the Board, as well as their report and our letter to the Chairman of the Board, acknowledging its receipt and expressing our obligations to them are printed in Volume VII, and the various appendices to the report of the Advisory Board are printed in Volume VIII of the Volumes accompanying this Report.

Volumes
VII and
VIII.

PART I.

MAGNITUDE AND IMPORTANCE OF THE PROBLEM OF LOCOMOTION IN LONDON, FUNDAMENTAL DIFFICULTY IN THE WAY OF IMPROVING THE MEANS OF LOCOMOTION, AND BRIEF ACCOUNT OF MEASURES ADOPTED IN THE PAST FOR FACILITATING LOCOMOTION.

CHAPTER I.

MAGNITUDE AND IMPORTANCE OF THE PROBLEM OF LOCOMOTION IN LONDON.

Area Dealt with.

4. One of the most important features of the problem of London locomotion is the movement of the population from the suburbs towards the centre every morning and back again in the afternoon and evening, so that, in any general examination of the means of locomotion and transport required to meet the wants of the public, the area taken into consideration must include the districts in which persons dwell, who, for the purpose of their work or business, move every day into and out of the central portions of the Metropolis, and must be wider than that contained in the Administrative County of London.

Area to be specially dealt with.

The area with which we propose to deal in the present Report is that of the City of London and the Metropolitan Police District:¹ this area is defined, in general terms, as containing every parish, the whole of which is within 15 miles of Charing Cross, or any portion of which is within 12 miles, and it contains 692·84 square miles, including land and inland water, but excluding tidal water and foreshore. It will be convenient to speak of it as "Greater London."

Within this area of 692·84 square miles there are six administrative county authorities, viz., those of London, Middlesex, Surrey, Kent, Essex and Hertford.

The Administrative County of London² comprises an area of 116·9 square miles of land and inland water, excluding tidal water and foreshore, and includes³ both the County of London and the City of London.

¹ THE METROPOLITAN POLICE DISTRICT was constituted by the Metropolitan Police Act, 1829, (10 Geo. 4, c. 44); by an Order in Council dated the 3rd January, 1840, made under that Act; and the Metropolitan Police Act, 1839, (2 & 3 Vict., c. 47).

The following are the places included, at the present day, within that District:—

The Administrative County of LONDON (exclusive of the County of the City of London.)
The Administrative County of MIDDLESEX.

And the following Civil Parishes in the ADMINISTRATIVE COUNTIES OF:—

SURREY:—Addington, Banstead, Barnes, Beddington, Carshalton, Cheam, Chessington, Coombe, Coulsdon, Croydon, Cuddington, East Molesey, Epsom, Ewell, Farley, Ham, Hook, Kew, Kingston-upon-Thames, Long Ditton, Malden, Merton, Mitcham, Morden, Mortlake, New Malden, North Sheen, Petersham, Richmond, Sanderstead, Surbiton, Sutton, Thames Ditton, Tolworth, Wallington, Warlingham, West Molesey, Wimbledon, and Woodmanstern.

KENT:—Beckenham, Bexley, Bromley, Chislehurst, Crayford, Downe, East Wickham, Erith, Farnborough, Foots Cray, Hayes, Keston, Mottingham, North Cray, Penge, Orpington, St. Mary Cray, St. Paul's Cray, and West Wickham.

ESSEX:—Barking, Buckhurst Hill, Cann Hall, Chigwell, Chingford, Dagenham, East Ham, Ilford, Loughton, Low Leyton, Waltham Abbey, Walthamstow, Wanstead, West Ham, and Woodford St. Mary.

HERTFORD:—Aldenham, Arkley, Barnet Vale, Bushey Rural, Bushey Urban, Chess-hunt, Chipping Barnet, East Barnet, Elstree, Hadley, Monken Hadley, Northaw Ridge, Shenley, South Mimms Urban, and Totteridge.

The respective County and Municipal Boroughs, Urban and Rural Districts, of which the aforesaid parishes form the whole or a part, will be found in Appendix G, Vol. IV.

² As constituted on 31st December, 1904.

³ It is provided by section 40, sub-sect. (1), of the Local Government Act, 1888, (51 & 52 Vict. c. 41), that, for administrative purposes, the Metropolis, (by Section 100 defined to mean the City of London and the parishes and places mentioned in Schedules A, B and C, to the Metropolis Management Act, 1855, [18 & 19 Vict., c. 120], as amended by subsequent Acts), should constitute the Administrative County of London; that, for non-administrative purposes, the County of the City of London should continue as such a separate County; and that, for the latter purposes, the remainder of the Administrative County of London, lying beyond the County of the City of London, should form and be called the County of London.

The boundaries of the Administrative County of London are irregular and haphazard, so that important parts of the urban area are not comprised in it: for example, the eastern boundary of the County of Middlesex runs along Edgware Road north of Paddington, and East Ham and West Ham are in the County of Essex.

The control of municipal matters in the Administrative County of London is vested in and divided among thirty municipal bodies, consisting of the London County Council, the Corporations of the Cities of London and Westminster, and 27 Metropolitan Borough Councils, which are quite independent of each other in most matters, though interdependent in some.

In "Extra London,"¹ by which we mean so much of the Metropolitan Police District as lies beyond the Administrative County of London, there are 142 local authorities,² comprising five county councils, eight county and municipal borough corporations, sixty urban district councils, fourteen rural district councils and fifty-five parish councils.³

Plate A.
Vol. V.

cannot be deter-
mined for all time,

5. At the same time we wish to guard against the conclusion that the limits within which we are of opinion that special measures should be taken can be finally and definitely laid down, either in the present day or at any future time.

A large number of persons who come to London every day, or very frequently, reside at a greater distance than that which we have indicated, and the area within which special measures are necessary will continue to grow as the population increases, and the inhabitants tend more and more to reside in the outlying districts, coming daily to their work or business in the central area, and returning to their homes in the evening.

and may require
to be altered as
circumstances
change.

We are of opinion that, for the present, it will be sufficient to deal specially with the area included in the Metropolitan Police District and the City of London, but if our general recommendations are accepted, it will be desirable that some means should be provided for extending or modifying from time to time, and as circumstances may require, the area subject to special treatment.

The Amount of Travelling for Which Provision Should Be Made.

Population to be
provided for.

6. The population of "Greater London" in 1901 amounted to 6,581,402 persons, but this figure inadequately represents the number of persons for whom special facilities for locomotion will be required in the future.

The following figures show the growth of the population during the past century in the area which constitutes "Greater London"³ :—

YEAR.	Population of "Greater London."	Increase in ten years.	Percentage of increase.
1801 - - - -	1,114,644	—	—
1811 - - - -	1,323,899	209,255	18·8
1821 - - - -	1,596,351	272,452	20·6
1831 - - - -	1,903,572	307,221	19·2
1841 - - - -	2,235,344	331,772	17·4
1851 - - - -	2,680,735	445,391	19·9
1861 - - - -	3,222,720	541,985	20·2
1871 - - - -	3,885,641	662,921	20·6
1881 - - - -	4,766,661	881,020	22·7
1891 - - - -	5,633,806	867,145	18·2
1901 - - - -	6,581,402	947,596	16·8

¹ This is otherwise called "Outer London."

² On December 31st, 1904.

³ For fuller details, see Appendix G, Vol. IV.

It is impossible to foretell the extent to which the population will increase even in the next 30 years, but it is growing rapidly, and provision must be made for meeting the requirements of a much greater population than that which existed in 1901. The Royal Commission of 1892 on Metropolitan Water Supply estimated that in 1931 "Greater London"¹ would contain, in round numbers, 11 millions of people. The calculations by which this figure was arrived at were based on an assumption of a rate of growth, to which the Commission declined to pledge itself, but which they considered less open to challenge than any other.

On the same assumption as to rate of growth, the population of "Greater London" in 1901 would have been 6,685,445, and the census of that year showed it to be 6,581,402. The experience of the rate of growth since 1892 tends, therefore, to show that the population of "Greater London" in 1931 may be not much short of 11 millions. Mr. Harper, the Statistical Officer of the London County Council, estimates the population in 1931 at 9,277,163,² but considers that figure to be a minimum.

7. The following table which shows the rateable value of the Administrative County (the County and the City) of London at intervals of 10 years since 1861, and for the years 1904 and 1905, also illustrates the remarkable growth of the Metropolis during the last 44 years:—

YEAR.	Rateable Value. ³		
	City of London. ⁷	County of London.	Administrative County of London.
	£.	£.	£.
1861 ⁴ - - - -	1,332,092	11,127,831	12,459,923
1871 ⁴ - - - -	2,534,204	17,429,081	19,963,285
1881 ⁴ - - - -	3,479,428	24,149,813	27,629,241
1891 ⁴ - - - -	4,084,230	28,920,382	33,004,612
1901 ⁵ - - - -	4,858,312 ⁶	34,785,306 ⁶	39,643,618 ⁶
1904 ⁵ - - - -	5,019,371 ⁶	36,067,603 ⁶	41,086,974 ⁶
1905 - - - -	5,107,182 ⁶	36,549,884 ⁶	41,657,066 ⁶

8. The necessity for additional means of locomotion increases in a higher ratio than that of the growth of the population. This result is largely due to the gradual abandonment, for various reasons, of the crowded centres as places of residence, which necessarily involves an increase of the daily movement of the population. The decrease⁸ in the night population of the City of London began half a century ago, and, as an illustration of the extent to which it has proceeded, we may mention that, although the night population of the City of London was 112,063⁹ in 1861, it was 26,923⁹ in 1901, while

Increase in the amount of travelling greater than the increase of the population.

¹ The area of "Greater London" referred to by the Commission of 1892 was stated (*see* p. 11, § 22 of Report) to be 701 square miles, as compared with 692·84 as herein mentioned. This would seem to include tidal water and foreshore, the inclusion of which, on the latest survey, would give "Greater London" an area of 700·47 square miles.

² Mr. Harper, Q. 4567, Vol. II. For further details *see* Appendix G, Vol. IV.

³ For fuller details, *see* Appendix G, Vol. IV.

⁴ The figures given for 1861, 1871, 1881 and 1891 are in respect of the areas which, in 1889, were constituted the County and the Administrative County of London respectively.

⁵ The figures given for 1901, 1904 and 1905 are in respect of the areas which, on the 1st of June, 1905, constituted the County and the Administrative County of London respectively.

⁶ All alterations included up to 1st of June, 1905.

⁷ Including the Inner and Middle Temples.

⁸ Mr. Harper, Qq. 4548 *et seq.*, Vol. II; and Appendix No. 6, Table No. 10, Vol. III.

⁹ Mr. Bates, Q. 22263, Vol. II.

the number of people who spend the day there in work or business amounts to 359,940,¹ and no less than 1,250,000¹ persons and 100,000¹ vehicles enter and leave the City of London daily.

It is much to be desired that, in addition to the ordinary census which gives the night population of the various parishes and districts of "Greater London," there should in future be a day census on the same lines. If this were available the movement of the population would be traceable in a far more satisfactory manner than is now possible, and the problem of locomotion in future could be better provided for.

Decrease in the night population of the central area.

9. The tendency to abandon the centre of London as a place of residence is not confined to the limits of the City of London; the central area, of which the night population is decreasing, is continually growing in extent.

Mr. Harper, Statistical Officer of the London County Council, divides "Greater London" into a large Central Area,² a Middle Zone and an Outer Zone, and he shows that, while the population of the Central Area tends to decrease, that of the Outer Zone increases more rapidly than that of the Middle Zone. As a consequence of this change the amount of unavoidable travelling increases rapidly. In the year 1881, the number of passengers carried by local railways, by tramways, and by the two principal omnibus companies was 269,662,649;³ for 1901, the corresponding figure was 847,212,335. The average number of such journeys per head per annum of the population increased in 20 years from 56·6³ to 128·7,³ or by more than 127 per cent.

Increase in amount of travelling per head of population.

These figures are not complete, and do not include the whole of the omnibus traffic. If the whole of that traffic were included, and also the local passengers carried in "Greater London" by the main lines of railway, Mr. Harper estimates that the average yearly number of journeys per head of the population would be 200.⁴ The Advisory Board of Engineers estimate from data they collected, that, for the year ending June 30th, 1904, the total number of passengers carried by local railways, by omnibuses and by tramways in "Greater London" amounted, approximately, to 1,164,000,000, which gives an average of 170 journeys per head per annum of the population.

According to the Advisory Board of Engineers, the number of journeys per head per annum by local railways, omnibuses, and tramways is 300 in New York, 270 in Berlin and 200 in Paris.⁵ Apart from all other causes, the amount of travelling increases with every improvement in the means of locomotion, and it is improbable that any practicable provision, on proper lines, of greater facilities for locomotion than exist at present, will outstrip the demands of the public in and around London for quick and cheap travelling.

See Plate V, Vol. V.

Plate VI, Vol. V.

Vol. VII, Report of Advisory Board, Table XVII, p. 24.

Ib., p. 24.

Importance of Facilitating Locomotion.

Existing difficulties.

10. The figures we have just given, taken in connection with the present conditions of congestion of traffic in so many of the streets of London; the difficulties which persons residing in the suburbs experience in moving to and from their daily work; the overcrowding of houses in the central area; and the impossibility of housing the working classes in that area at rents which they can afford to pay, are conclusive as to the necessity of dealing with the whole problem of London locomotion on a comprehensive plan, and with as little delay as possible.

¹ Mr. Bates, Qq. 22265, 22272, 22273, Vol. II.

² Mr. Harper's Central Area includes the Cities of London and Westminster, the whole of the Metropolitan Boroughs of St. Marylebone, Holborn, Finsbury, Shoreditch, Bethnal Green, Stepney, Bermondsey and Southwark, the part of St. Pancras south of Euston Road, and the part of Lambeth north of Kennington Lane. See Appendix No. 6, Table No. 2, (footnote), p. 126, Vol. III. See also Plate V, Vol. V.

³ Mr. Harper, Appendix No. 6, Table No. 5, p. 127, Vol. III. For definition of "local railways" see same Table.

⁴ Mr. Harper, Q. 4595, Vol. II.

⁵ See "Street and Electric Railways, 1902," (Special Report of the Census Office of U.S.A.), Washington-Government Printing Office, 1905. "Annuaire Statistique de la Ville de Paris" (Préfecture de la Seine, Direction des Affaires Municipales; Service de la Statistique Municipale), Paris—Masson et Cie, Éditeurs

A conspicuous instance of the congestion of the London streets is that which occurs in Piccadilly, at the top of St. James's Street. The congestion of the street in this locality is merely one instance of what is occurring in many parts of London. The evil is greatly aggravated at places where important streams of traffic intersect. This will be obvious from the following table prepared by the Advisory Board of Engineers, giving statistics of the volume of vehicular traffic at each of eight such places.

The table shows the number of vehicles passing such points of intersection :—

Points of observation.	Per day of 12 hours, 8 a.m. till 8 p.m. No. of Vehicles.	At busiest hour.
Marble Arch - - - - -	29,320	3,069
Hyde Park Corner - - - - -	29,286	2,902
Piccadilly :—at St. James's Street - - - - -	20,474	2,067
Piccadilly Circus - - - - -	27,050	2,670
Charing Cross - - - - -	27,768	2,642
Strand :—at Wellington Street - - - - -	19,743	1,821
Ludgate Circus - - - - -	22,956	2,252
Bank - - - - -	27,523	2,699

At such points the traffic has frequently to be “held up,” and the following figures, taken from the same report, show the amount of delay thereby caused :—

*Congestion in the streets ;
especially where
important streams
of traffic cross each
other.*

*Delay caused by
“holding up” traffic
at points of inter-
section.*

TABLE SHOWING DELAYS BY THE HOLDING UP OF CROSS TRAFFIC.

Table XLIII from Report of Advisory Board of Engineers, p. 59, Vol. VII.

JUNCTION.	Aggregate of stoppages per day of 12 hours from 8 a.m. till 8 p.m.						Aggregate of stoppages during busiest hour.						
	North and South Traffic.			East and West Traffic.			Busiest Hour.	North and South Traffic.			East and West Traffic.		
	Number of Delays.	Total Time of Delays.	Total Number of Vehicles.	Number of Delays.	Total Time of Delays.	Total Number of Vehicles.		Number of Delays.	Total Time of Delays.	Total Number of Vehicles.	Number of Delays.	Total Time of Delays.	Total Number of Vehicles.
PICCADILLY : At St. James's Street . . .	214	hrs. min. 3 41·4	5,018	230	hrs. min. 1 47·3	15,456	4—5 p.m.	31	mins. 43·5	550	31	mins. 15·7	1,517
STRAND : At Wellington Street ¹ . . .	245	3 32·5	7,821	259	4 6·5	11,922	4—5 p.m.	18	25·0	757	21	29·5	1,080
LUDGATE CIRCUS . . .	297	3 41·2	13,728	301	4 42·6	9,228	9—10 a.m.	27	18·7	1,475	29	23·9	870
BANK : At Princes Street . . .	337	6 53 ²	3,059	—	—	—	11 a.m.—noon.	31	37·7 ²	277	—	—	—
At King William Street . . .	314	4 41·9 ²	4,822	—	—	—	11 a.m.—noon.	31	24·9 ²	451	—	—	—
At Queen Victoria Street . . .	—	—	—	262	2 16·4 ²	5,620	11 a.m.—noon.	—	—	—	31	18·3 ²	638
In Mansion House Street . . .	—	—	—	324	3 6·4 ²	10,967	11 a.m.—noon.	—	—	—	31	15·9 ²	1,125
In Mansion House Street . . .	—	—	—	240	2 39·7 ⁴	4,943	11 a.m.—noon.	—	—	—	30	19·8 ⁴	540
At Threadneedle Street . . .	—	—	—	324	5 5·5 ²	5,459	11 a.m.—noon.	—	—	—	29	32·0 ²	564
At Cornhill . . .	—	—	—	315	5 1·4 ²	3,216	11 a.m.—noon.	—	—	—	32	31·6 ²	313
In Mansion House Street . . .	—	—	—	181	1 4·3 ²	5,385	11 a.m.—noon.	—	—	—	22	7·7 ²	503

¹ From observations made by the London County Council in 1902; delays of less than 30 seconds not recorded.

² Traffic in one direction only, viz., going south out of Princes Street and north out of King William Street; going east out of Queen Victoria Street, and west out of Threadneedle Street and Cornhill, and west out of Mansion House Street to Poultry.

³ All eastward traffic in Mansion House Street.

⁴ Eastward traffic in Mansion House Street to Cornhill and King William Street.

NOTE.—Except in the case of the Strand at Wellington Street the delays were not observed on the same days as the traffic counts were made, therefore the number of vehicles must be taken as representative.

The nature of the vehicular traffic varies at different points, but Sir Alexander Bruce, Assistant Commissioner of Metropolitan Police, estimates¹ that 60 per cent. of the vehicular traffic of London is made up of omnibuses and hackney carriages.

11. Apart from the special delay at points of intersection, there is no doubt that the continuous growth of vehicular traffic is causing, and, unless some remedy is applied, will continue to cause, increasing congestion in the streets, with resulting slowness of movement. At places of great congestion, the vast volume of traffic which pours through the thoroughfares of London is reduced to a walking pace, the rate of movement being set by the slowest vehicles. The burden of delay falls on all passengers, but presses most heavily on the professional and working classes, and especially on those who have to proceed a considerable distance to their work or business every day.

Increase of street congestion.

The "Housing Problem" As Affected by the Facilities for Locomotion.

12. The evils resulting from slow and imperfect means of locomotion appear to us to be quite as serious from a social as from an economic point of view. As an illustration of this branch of the subject, we propose to deal at some length with the question of cheap and rapid communication as it affects the housing of the working classes.

Other evils due to same cause.

13. The evidence before the Commission appears to us to have clearly established certain propositions:—

(1.) That the overcrowding in the metropolitan area, which is admittedly a most serious evil, is, generally speaking, greatest in the central area, and tends to diminish towards the circumference. According to tables² furnished by the Statistical and other Officers of the London County Council, it appears that the population per acre in the central area of London is 148, in the rest of the county (excluding North Woolwich) 54, in districts adjacent to the county (including North Woolwich) 16·6, and in the rest of "Extra London" 2·5. In every case water and open spaces are excluded from computation. Upwards of a million and a-half of people live in the central or most congested area.³ The overcrowding, speaking generally, increases or diminishes in accordance with the density of the population per acre. In these calculations a tenement is deemed to be overcrowded when the occupants exceed two per room.⁴ Whether this be the correct basis or not is immaterial for the present purpose; it is, at all events, a reliable basis for comparison.

Extent of overcrowding.

Plate VII,
Vol. V.

(2.) That the average weekly rents for workmen's dwellings are highest in the central and most crowded districts of London, and tend to diminish toward the suburbs.⁵ The Statistical Officer of the London County Council states⁶ that, in the central area, the average weekly rent of newly-erected working-class houses is 3s. 3½d. per room, in the rest of the county, 2s. 4½d., and in "Extra London" is 2s. 0d.⁷ These figures can, of course, only be regarded as approximate.

Rents higher in the central districts.

(3.) That the price of land in the central districts of London makes it impossible to re-house the working classes within those districts at rents which they can afford to pay without a heavy loss to those who undertake the re-housing. Also that the price of land a few miles out is still sufficiently low to admit of re-housing, without loss, at rents which the tenants can afford to pay.

Land too valuable for re-housing in central districts.

Re-housing commercially possible in suburbs.

An illustration of the loss incurred by re-housing the working classes in the central portions of London is furnished by some recent experiences of the London County Council.

¹ Sir A. C. Bruce, Q. 7418, Vol. II.

² Mr. Harper, Q. 4614, Vol. II; and Appendix No. 6, Tables Nos. 6, 7 and 8, pp. 128-132, Vol. III.

³ Mr. Harper, Appendix No. 6, Table 2, p. 126, Vol. III.

⁴ Mr. Harper, Q. 4637, and footnote, p. 168, Vol. II.

⁵ Mr. Harper, Appendix No. 6, Table No. 9, p. 132, Vol. III.

*Loss on re-housing
in connection with
the Holborn to the
Strand Improve-
ment.*

In connection with certain street improvements, especially the formation of the new street from Holborn to the Strand now in course of completion, the Council was required, under the authorising Act, to build workmen's dwellings in place of those that were demolished. For this purpose they bought the Bourne Estate, close to the site of the improvement. The cost price was £201,107, being the commercial value. They were obliged to write this sum down to £44,000, its value earmarked for Artisans' Housing, and to debit the balance to the cost of Street Improvements.¹ This was necessary in order to admit of charging rents within the means of the families to be provided for. Even after this writing down, they have had to charge rents of from 9s. 6d. to 11s. a week for a three-roomed tenement, in order to reimburse themselves for this artificially-reduced outlay.² The buildings erected will accommodate 2,640 persons, and there is therefore a loss of very nearly £60 per head of the persons re-housed, and the whole of this loss³ falls upon the rates.

*No loss on housing
at Tooting.*

About the same time the London County Council purchased some land at Tooting, which is accessible by electric tramway, as well as by railway, in order to build workmen's dwellings. They acquired it at a price which required no writing down, and are now letting three-roomed cottages at Tooting at rents of from 7s. to 7s. 6d. per week;⁴ the Tooting scheme is self-supporting.

The following figures will show how it is that the one scheme entails a very heavy loss, and the other entails no loss at all:

	£	s.	d.
On the Bourne Estate, actual cost of land for three-roomed tenement - - - - -	454	4	0 ⁵
Cost of building, etc. - - - - -	307	8	6
Total -	£761	12	6 ⁸

On the Tooting Estate, actual cost of land for three-roomed cottage - - - - -	28	15	0 ⁷
Cost of building, etc. - - - - -	234	15	0
Total -	£263	10	0 ⁸

*Experience the same
in other cases.*

The lesson to be learned from the two cases just cited is confirmed by every housing scheme, without exception, that the London County Council have undertaken: wherever they have had to provide workmen's dwellings in the central districts, there has been a heavy loss.⁶ In effect the rents are largely paid out of the rates. In the few cases where they have provided workmen's dwellings outside, the schemes have been self-supporting so far as houses have been built. Plate IXa,
Vol. V.

¹ By letter, addressed to the Secretary to the Commission by the Comptroller to the London County Council, dated the 9th of January, 1905, in reply to a request of the Commission, it was stated that the cost of the Bourne Estate site was allocated as follows in the Council's Accounts:—

"To the Capital account of the dwellings, as part of the cost thereof, being "the value" of the site with the obligation of providing working class "dwellings upon it":—	£44,000	0	0
"To the Capital accounts of the street improvements in respect of which "the re-housing obligation was imposed as part of the cost of the street "improvements, being the difference between the cost price and the "housing" value:—			
"Holborn to Strand New Street" - - - - -	137,181	9	10
"Southampton-row Widening" - - - - -	19,926	2	10
	201,107	12	8

⁵ As valued by the Council's Valuer.

⁶ Interest and repayment charges to be met out of the rents of dwellings.

⁷ Interest and repayment charges to be charged upon the County Rate as part of the cost of improvements,—interest approximately 3½ per cent. and repayment by equal annual instalments spread over 60 years.

⁸ Ascertained from the London County Council. ⁹ Mr. Young, Q. 7170, Vol. II.

¹⁰ Mr. Riley, Q. 7014, Vol. II. ¹¹ Mr. Riley, Q. 7010, Vol. II. ¹² Mr. Riley, Q. 7012, Vol. II.

¹³ Mr. Riley, Q. 7009, Vol. II. ¹⁴ Mr. Riley, Q. 7011, Vol. II. ¹⁵ Mr. Harper, Appendix No. 6, Statements G and H, pp. 233 *et seq.*, Vol. III.

The following table¹ offers a comparison of the cost of re-housing schemes which have been carried out by the London County Council in central districts, in accordance with the statutory requirements to re-house "on site," and of housing schemes voluntarily carried out by the London County Council in the suburbs for the purpose of providing dwellings. The result shows that, in the central districts, the ratepayers have sustained a loss of £412,683 in re-housing 7,586 persons on 18·55 acres; in the suburbs the Council have already housed 1,797 persons on 14·15 acres without any loss to the rates.

This table shows practically every feature of a typical urban clearance scheme, and of a typical land purchase and construction scheme in the suburbs,—in the one case, a great waste of public money and a still crowded population per acre,—in the other case, no loss of money at all and a population housed in healthy surroundings.

¹ This table is Statement H in Appendix No. 6 (Mr. Harper), p. 236A, Vol. III.

COMPARISON OF COST OF HOUSING IN

I.—Cost of Clearing Insanitary Areas and of Re-housing the Persons Displaced There-

Site of Clearance.	Area.	Site of Re-housing.	Area, including one-half adjacent streets.	Number of Working- class Persons Displaced.	Statutory Obligation to Re-house.
	Acres.		Acres.		
1890. Boundary Street, Bethnal Green	14·85	Boundary Street and Goldsmith's Row	11·00	5,719	4,700
1891. Brooke's Market, Holborn	·54	Brooke's Market	·96	55	60
1893. Ann Street, Poplar	·75	Ann Street	·79	261	180
1895. Falcon Court, Southwark . .	1·49	Borough Road, Green Street and Pocock Street	1·06	820	500
1895. Churchway, St. Pancras . . .	1·98	Churchway	1·39	1,095	580
1895. Clare Market, Strand . . .	5·23	Duke's Court and Russell Court . .	·87	3,068	2,250
		Millbank	3·08		
	24·84		18·55	11,038	8,270

Plate IXa,
Vol. V.

(a). This includes an estimate of the number to be accommodated in rooms unoccupied at the date when

Boundary Street	1·56
Brooke's Market	1·37
Ann Street	1·39
Falcon Court—	
Borough Road	1·31
Green Street and Pocock Street	1·70

NOTE :— where re-housing accommodation is provided on a site apart from the cleared site, the cost of clearance

II.—Cost of Housing on Outlying Estates Acquired by the London County Council under

SITE.	Area.	Approximate Number of Persons occupying the new Dwellings. (b)	
		Total.	Number per Acre.
	Acres.		
Totterdown Fields (Tooting), Section A	9·525	1,160	121·8
White Hart Lane (Tottenham), Section A	4·625	637	137·7
	14·150	1,797	127·0

(b). This includes an estimate of the number to be accommodated in rooms unoccupied at the date when the figures on the Totterdown

CENTRAL AND SUBURBAN DISTRICTS.

from in the Case of Schemes Undertaken and Completed by the London County Council.

Approximate Number of Persons occupying new Dwellings (a).		Cost of Clearance.	Housing Value of part of Site devoted to Re-housing.	Net loss to Rate-payers.	Cost of Buildings for Re-housing.	Gross Cost of Land and Buildings.	Average Cost per Head of Persons in Occupation.		Average Cost per Room.	
Total.	Number per Acre.						Land and Buildings.	Buildings.	Land and Buildings.	Buildings.
		£.	£.	£.	£.	£.	£.	£.	£.	£.
4,301	391.0	332,847	63,010	269,837	282,848	615,495	143.1	65.7	222.8	102.3
41	113.9	8,822	750	8,072	3,017	11,839	288.8	73.6	394.6	100.6
439	555.7	10,916	2,290	8,656	23,743	34,659	79.0	54.1	110.0	75.4
501	472.6	31,556	7,100	24,456	37,077	68,633	137.0	74.0	201.9	109.0
656	471.9	40,900	8,550	32,350	39,305	80,205	122.3	59.9	192.8	94.5
1,648	681.6	88,418	7,200	69,312	31,010	189,133	114.8	61.1	165.5	88.1
	342.5		11,906		69,705					
7,586	408.9	513,459	100,776	412,683	486,505	999,964	131.8	64.1	199.8	97.2

the figures were compiled. The average number of persons per room for each estate is as follows:—

Churchway 1.58

Clare Market—

Duke's and Russell Courts 1.58

Millbank 1.37

includes the cost of acquiring such re-housing sites and laying them out for the erection of dwellings.

Part III of the Housing of the Working Classes Act, 1890, (As Far As Developed up to Mar. 31st, 1904).

Cost of Land and of Laying out Roads and Sewers.	Approximate Cost of Buildings.	Gross Cost of Land and Buildings.	Average Cost per Head of Persons in Occupation.		Average Cost per Room.	
			Land and Buildings.	Buildings.	Land and Buildings.	Buildings.
£.	£.	£.	£.	£.	£.	£.
18,975	70,476	89,451	77.1	60.8	93.0	73.3
7,896	37,345	45,041	70.7	58.6	85.3	70.7
26,871	107,821	134,492	74.8	60.0	90.3	72.4

were compiled. The estimate is calculated at the same average per room, viz., 1.21, as the cottages now occupied Fields Estate.

In short, the evidence before us proves that it is not practicable to re-house the working classes in the central districts at economic rents, while, in the outer zones, re-housing can be effected without loss if means are provided to enable workmen to get in and out of London quickly and cheaply.

The persons actually displaced do not occupy the new houses.

The practice of re-housing required by past legislation appears to have been based upon the assumption that the persons displaced in consequence of an improvement or a clearance will occupy the new buildings. Experience has shown that this is not the case. The interval of about two years which occurs between demolition and reconstruction disperses the persons actually displaced. Even in cases where the London County Council has carried out clearances in sections, and has thus been enabled to offer new accommodation before complete displacement took place, little or no advantage has been taken of the opportunity: for example, in the Boundary Street area, out of 5,719 persons displaced, only eleven returned to the new dwellings.

As a result of the enactment of the Housing of the Working Classes 3 Edw. 7, Act 1903, a discretion is now vested in the Local Government Board, c. 39. which enables them to authorise re-housing at a distance from the demolished buildings instead of in close proximity,¹ as formerly; but without facilities for locomotion this discretion cannot be generally exercised. The question of the loss in re-housing has become of more importance, because the number of cases in which re-housing is required has been increased by the Legislature.

Many workmen can live outside the central area.

(4.) That a large proportion of workers in the overcrowded parts of London do not need to live near their work.²

Workmen live outside when possible.

(5.) That, where facilities for locomotion have been afforded, the population does, in fact, take advantage of them to live outside London.³ This is illustrated by the increase in the population of Edmonton and of Walthamstow, since the Great Eastern Railway Company commenced to run workmen's trains to these places, as appears in the following table:—

	EDMONTON.		WALTHAMSTOW.	
	Population.	—	Population.	—
1851	9,708		4,959	
1861	10,930		7,137	
1871	13,860	Trains just started.	11,092	Trains just started.
1881	23,463		21,715	
1883		3 trains instead of 2.		3 trains instead of 2.
1891	36,351	5 trains instead of 3 in 1890.	46,346	6 trains instead of 3 in 1890.
1901	61,892	7 trains in 1899.	95,131	8 trains instead of 6 in 1899.

Leyton affords another example: the population more than doubled in ten years up to 1891.⁵

Improved means of locomotion, the remedy for overcrowding.

14. Witnesses, who have special knowledge of the subject, are of opinion that the remedy for overcrowding is to be found in removal of the people to outside districts by providing additional facilities for locomotion, and in that opinion we agree.⁶ There are, however, certain considerations connected with this question which should be borne in mind.

¹ See Mr. Byrne, Q. 324, Report of Joint Select Committee on Housing of the Working Classes, 1902, Parliamentary Paper, (325), v, 801.
² Mr. Burgess, Q. 5788. Sir Douglas Fox, Q. 14139. Rt. Hon. C. Booth, Q. 19087.—Vol. II.
³ Mr. Harper, Q. 5058, Vol. II.
⁴ Mr. Harper, Qq. 4601 *et seq.*, Vol. II.
⁵ Mr. Shadrake, Q. 15215, Vol. II.
⁶ Mr. Harper, Q. 5064. Mr. Burgess, Q. 5819. Rt. Hon. C. Booth, Qq. 18998 *et seq.*—Vol. II.

Railway Companies are not generally prepared to construct lines leading to districts which are unoccupied, or sparsely occupied, in the expectation of being "recouped" by the growth of a larger population. The Railway Commissioners have held, to use the words of the late Mr. Justice Wright,¹ that Parliament did not intend by the "Cheap Trains Act to throw upon railway companies the duty of opening out neighbourhoods for the creation of new workmen's residential districts," and that they have, consequently, no power, under the Cheap Trains Act of 1883, to order the running of a service of workmen's trains unless, and until it could be proved, that a demand for such trains existed along the line. Accordingly many places suitable for building are not accessible by railway; and others that are accessible, cannot be utilised for residence by the poorer people working in London, owing to want of trains of sufficient cheapness and frequency. It is easy to see how the more even distribution of population over the land adjacent to London has been impeded by these conditions.

There has been a great aggregation of the working classes in those districts which have been opened out, especially in the east and the north-east of London, where the Great Eastern Railway Company have done much to supply means of cheap transit.

With the rapid growth of a large population, the requirements of urban life—streets, drainage, lighting, &c.—have also rapidly grown, while the presence of so many houses of comparatively low rental has discouraged the construction of better class houses.² For example, in Walthamstow, out of 18,600 houses, 15,000 are assessed at less than £16 a year.³ This explains why, in certain of these districts, the rates are so high. The poorer people are limited in their choice of residence; they crowd to places where they can get facilities for locomotion⁴; hence the rateable value of such districts is low, and the rate in the pound high in proportion.

15. If there were facilities for going out in all directions, not only would the great overcrowding in trains, which has been the subject of much complaint, be lessened, but the demand for housing would be more dispersed, and the rents payable by the working classes would be kept within moderate limits.⁵ Where only a few districts are opened up, and a great many are really required to satisfy the necessities of the population, a higher rental is created in those few which alone are made accessible.

16. In the course of his evidence, Mr. R. W. Perks, M.P.,⁶ the late Chairman of the Metropolitan District Railway Company, suggested that railway companies ought to be allowed to buy land in districts through which they were making their line in order to obtain for themselves a portion of the additional value which they were creating. At the present time the London County Council has power to purchase land voluntarily or compulsorily either inside or outside of the Administrative County of London for the purposes of housing the working classes, and they are at liberty, under the Housing of the Working Classes Act, 1903, to build shops upon land so purchased. Several properties have been so acquired by the London County Council, but their powers of purchase for that purpose might be more widely exercised if they were enabled to dispose of the properties they acquire in the most profitable manner. At present the London County Council have no power to dispose of the properties, or to sell such parts of the land as they might with advantage be able to dispose of, for a commercial or industrial purpose, reserving what may be required for workmen's dwellings. It is for Parliament to decide whether such powers should be conferred, and, in that event, what safeguards are necessary. Acts of Parliament, such as that authorising the Holborn to the Strand Improvement, have already enabled the London County Council to "recoup" themselves, by the acquisition at pre-existing value, of land adjacent to a projected

Obstacle to the provision of cheap trains.

Injurious consequences.

Increase of means of locomotion is followed by a rise in land values.

Acquisition of land by railway companies.

Restrictions on the disposal of land purchased by the London County Council.

¹ In the matter of a Reference under the Cheap Trains Act, 1883:—In *re* London Reform Union and National Association for the Extension of Workmen's Trains and the G.N.R. and N.L.R. Companies, July 20-1, 1899, Railway and Canal Traffic Cases, Vol. X, p. 293.

² Mr. Burgess, Q. 5820, Vol. II.

³ Mr. Gooday, Appendix No. 56, Statement A, p. 583, Vol. III.

⁴ Mr. Harper, Appendix No. 6, Table 47, p. 180, Vol. III.

⁵ Mr. Harper, Qq. 4600 *et seq.* Mr. Burgess, Q. 5846. Rt. Hon. C. Booth, Q. 19078.—Vol. II.

⁶ Mr. R. W. Perks, M.P., Q. 19896, Vol. II; and Appendix No. 60, p. 621, Vol. III.

improvement. We feel that it is outside the province allotted to us to pronounce an opinion on this subject; but we think it right to point out that the provision of means of transit is a costly business and that some "recoupment" might be obtained by the judicious acquisition beforehand, at a fair price, of the land intended to be opened out for building.

*Greater facilities
for locomotion
essential;*

17. Whatever view may be taken in regard to the acquisition and disposal of land by railway companies, or by the London County Council, we have come to the conclusion, that, in order to relieve overcrowding, means must be provided for taking the population into and out of London, not in one or two directions, but in many directions, at rapid speed, frequent intervals and cheap rates.

*and would render
it possible to enforce
regulations against
overcrowding.*

If adequate and suitable means of locomotion were provided regulations against overcrowding could be more stringently enforced in the crowded districts. Many persons, who could reside at a distance from their work, would do so, and, where a business was of such a nature that the workers must live on the spot, and the owners of the business could not afford to pay wages sufficient to enable the worker to pay such rents as would enable suitable houses to be provided, the tendency would be for such owners to move their business to other and more suitable localities.

It cannot be right to promote, by an indirect subsidy, the retention of factories and businesses in the overcrowded parts of the Metropolis, where, without such assistance, they can no longer be carried on at a profit. The provision of houses, at less than cost price, in crowded localities, must tend to check the movement, which has already begun, for the removal of certain classes of work to the outskirts of London, or even beyond them.

*Frequent change of
residences.*

18. Under present conditions, one-third¹ of the residents in the houses owned by the London County Council change their place of abode every year. Such frequent changes indicate an unsatisfactory state of things. When their place of employment changes, the workmen are forced to change their place of residence. A general improvement in the means of locomotion would obviate the necessity for such frequent changes, and would enable families to live in cottage dwellings, which are obviously more desirable than block tenements.

*Importance of
question of cheap
and quick loco-
motion not confined
to working classes.*

19. We have dealt at some length with the question of locomotion as affecting the working classes, but the importance of facilitating rapid and cheap locomotion is not a matter that concerns only the working classes. It materially affects the health, comfort and efficiency for work, of the whole community. The vast majority of people who come to their business in the centres of London every day, and who do not actually perform manual labour, possess very limited incomes, and, by the nature of their employment, are compelled to preserve a respectable appearance. If they fail to do so, they may lose their employment, and may seriously impair their prospect of advancement. To such persons the payment of a daily fare constitutes an appreciable pecuniary burden. Apart from the important questions of sacrifice of leisure and comfort, prolonged journeys to and from their work, as well as residence in crowded localities amid unhealthy surroundings, seriously impair the efficiency of the population, considered merely as agents of production.

*Facilities for loco-
motion specially
required in London
as compared with
other cities.*

20. It is sometimes said that London is a city under conditions special to itself, and, in respect to facilities for locomotion, incapable of being judged by the standard of other cities: the remark appears to us to be true in the opposite sense to that in which it is generally used. The magnitude of the population of London, and the extent of the area over which that population is spread, make the problem of locomotion specially important for London, and, if the standard of movement cannot be raised to the level attained elsewhere, London must fall behind in competition with other cities, and the life and growth of the Metropolis will be slowly, but not the less surely strangled, by the choking of the great arteries of traffic.

¹ Mr. Burgess, Q. 5823, Vol. II.

CHAPTER II.

FUNDAMENTAL DIFFICULTY IN THE WAY OF IMPROVING THE MEANS OF
LOCOMOTION IN LONDON.*Insufficiency of Street Accommodation.*

21. The chief difficulty that stands in the way of improving the means of locomotion in London is the narrowness of the streets, and the fact that they were not originally laid out on any general plan. If the streets were of sufficient width, and had been laid out on a regular plan, the congestion of vehicular traffic would practically disappear; the long distance traffic could be provided for by shallow underground railways at a cost which would not be prohibitive; and a complete system of surface tramways could be laid down, which would carry the short-distance and miscellaneous passenger traffic of London cheaply and quickly.

Streets not laid out on a regular plan, and not of sufficient width.

22. The present unsatisfactory conditions are largely due to the fact that there did not exist in the past any municipal or other authority having jurisdiction over the whole area, and possessed of sufficient power and resources to enable it to deal satisfactorily with the problem of locomotion, and the other questions allied thereto.

No municipal body in the past possessed of sufficient authority, and having jurisdiction over the whole area.

The history of the growth of London is, to a very great extent, a record of the aggregation of houses to the central, or original, city, having an area of about one square mile. This central nucleus, still known as the City of London, was built, or grew up, at a time when the vast amount of business now transacted in it, and the volume of traffic that now flows through its streets, could not have been foreseen. Many street improvements have been made to relieve the special difficulties that forced themselves from time to time on the notice of the authorities, but the great cost of such improvements, due to the high value of City property, stood in the way of any general reform, and the street accommodation of the City of London is inadequate to meet the requirements of the present day. As population increased, and business grew, various parishes and villages, outside the City of London, gradually became a portion of the Metropolis, but were not assimilated by any central municipal authority. It is probable that the great extent to which, in early days, the river could be, and was, used as a means of communication from east to west prevented attention being given to the laying out of new streets and roads as London stretched out beyond its original limits. However that may be, the parishes preserved their separate and independent constitution and authority, and the state of confusion and administrative disorganisation that prevailed only fifty years ago is almost incredible.

The City of London.

Mode of growth of London outside the City.

23. To illustrate the condition of things to which we have just referred, we give the following quotation from the speech made by Sir Benjamin Hall, in the House of Commons, on March 16th, 1855, when introducing the Bill for the Metropolis Management Act, 1855:—

Municipal Government outside the City in 1855.

“ Then, as to the mode in which, under the existing system, the great thoroughfares were managed, in reference to the paving and lighting. In order to give an illustration of this, he would ask those whom he had the honour of addressing to follow him in his description of the Strand, commencing at Northumberland-house and ending at Temple-bar. Between No. 1, Strand (near Northumberland-house) and Temple-bar, a distance of about 1,336 yards, or a little more than three quarters of a mile, the street is divided into seven different paving boards. First is St. Martin’s, from the starting point to the centre of Cecil-street (between Nos. 84 and 85), a distance of about 480 yards. Up to this point the whole width of the street belongs to St. Martin’s, but from Cecil-street to opposite the centre of Burleigh-street (near No. 112), a distance of 145 yards, only one-half the street (the north side), is under that paving board. The other half, from Cecil-street

“(between Nos. 84 and 85) to No. 107, a distance of about 118 yards, belongs to St. Clement’s. At No. 107 the district belonging to the Savoy commences, and, for a distance of about 27 yards, the street is divided between the Savoy and St. Martin’s, from opposite the centre of Burleigh-street (near No. 112) to opposite the east side of Wellington-street North (near No. 135), a distance of about 83 yards, the street is divided between the Savoy and St. Clement’s; and from this point to Duchy-place (between Nos. 137 and 138), a distance of about 25 yards, it is divided between the Savoy and St. Mary’s. From this point to the east end of St. Mary’s church (near 161), a distance of about 226 yards, the whole width of the Strand belongs to St. Mary’s with the exception of a piece in front of Somerset-house. This portion is about 45 yards long and 12 yards wide. It is repaired by the Somerset-place contractor. From the east end of St. Mary’s church to Temple-bar, a distance of about 400 yards, the whole width of the Strand belongs to St. Clement’s. The different paving boards along the Strand from No. 1 to Temple-bar, therefore, come in the following order:—1. St. Martin’s alone; 2. St. Martin’s and St. Clement’s; 3. St. Martin’s and the Savoy; 4. Savoy and St. Clement’s; 5. Savoy and St. Mary’s; 6. St. Mary’s alone; 7. St. Mary’s and Somerset-place; 8. St. Mary’s alone; 9. St. Clement’s alone; the distance being 1,336 yards, or three quarters of a mile, and there being nine divisions. Cecil-street, a street running from the Strand towards the river, with a carriage-way about ten yards wide, is under two separate managements, namely, St. Martin’s and St. Clement’s. Along Wellington-street North, from the north end of Exeter-street to the south side of the Strand, a distance of 100 yards, there are four separate jurisdictions, namely, St. Paul’s, Covent-garden, St. Martin’s, St. Clement’s, Savoy. It happens that St. Clement’s division comes close up to the houses at the east side of Wellington-street North. The paving of the roadway for a considerable length of the street is, therefore, done by that parish, but as the houses on the east side are in St. Mary’s, they cannot be rated for the repairs of the roadway.”

It will be seen that London, only fifty years ago, consisted of a central area of about one square mile under the Corporation of the City of London, surrounded by parishes continually growing in population, and in importance; each parish a law unto itself, uncontrolled by any central municipal, or other local authority. Under such conditions grew up the Metropolis of the United Kingdom, composed of streets laid out without plan, tortuous in direction, varying in breadth, and generally insufficient in dimensions.

CHAPTER III.

BRIEF ACCOUNT OF MEASURES ADOPTED IN THE PAST FOR FACILITATING LOCOMOTION IN LONDON.

History of Street Improvements in London.

London must be dealt with as it now exists.

24. Whatever oversights may have occurred in the past, we must now deal with London as it exists in the present day. A review of the principal measures adopted during the last sixty years for facilitating locomotion and transport may, however, be of some value as a guide to action in the future.

As we have already explained, the wants of London, as a whole, in the matter of roads and streets, have never been sufficiently considered in the past. In the early days no municipal authority existed outside the City of London, which could deal with the whole problem in a broad spirit, and London was allowed to grow up piecemeal as local conditions or accident prescribed. No sufficient provision was, or under such conditions could have been, made to meet future requirements. The streets of the present day are frequently survivals of the village roads and lanes, developed into metropolitan thoroughfares under the care of small and independent local authorities, whose views did not extend beyond the requirements of the limited areas for which they were responsible.

It may be admitted that the wants of London as they exist in the present day could not, under any circumstances, have been completely foreseen in the past; but, in the absence of a powerful and enlightened authority controlling the whole area, private interests, and the rivalry and prejudice of public bodies, were allowed to stand in the way of improvements that were obviously desirable, and that could have been effected at moderate cost and with a minimum of inconvenience to the public. The rejection of the plans of Sir Christopher Wren and Sir John Evelyn for the rebuilding of the City of London after the Great Fire bears witness, as was observed by the Royal Commission appointed in 1842, "to the difficulty of effecting "great and systematic changes in such a Metropolis" as London.¹

Rejection of Sir Christopher Wren's and Sir John Evelyn's plans.

25. When the question of improving the streets of London was taken in hand in the last century, the attention of the authorities was devoted to the removal of particular evils which could no longer be overlooked, rather than to the adoption of a comprehensive plan which would provide both for immediate and future wants. Even the streets that have been improved in comparatively recent times are, as a rule, of insufficient width, and important thoroughfares are often narrower at one point than another.

Street improvements actually undertaken were limited in scope.

26. Outside the City of London, the earlier improvements of the last century were carried out in connection with the development of Crown property and at its expense. We refer especially to the formation of Regent Street, and the improvements at Charing Cross and in the Strand. From the year 1832, more attention was given to the improvement of London. The method adopted was the appointment from time to time of Select Committees of the Houses of Parliament, or of Royal Commissions, for the consideration of the general question of improvements, or for the examination of definite proposals. Such proposals as were finally approved were carried out under the authority of Acts of Parliament, the actual construction being in the hands of Your Majesty's Commissioners of Woods and Forests and Land Revenues, and the funds being provided for the most part by the levy of duties on coal and wine.

Street improvements in connection with Crown property.

Questions of improvement dealt with by Committees of Houses of Parliament or Royal Commissions.

Provision of funds.

Report, Minutes of Evidence and Appendix, 1836, Parliamentary Paper, (517), XX, 1.

27. In 1836, (16th June), a Select Committee of the House of Commons was appointed to "consider of the most effectual Plan for raising of Money "to carry into effect the necessary Improvements required in the Cities of "London, Westminster, Borough of Southwark, and Counties of Middlesex "and Surrey; and for the purchasing of the Interest of the Proprietors of "the Waterloo and Southwark Bridges, that they may be thrown open for "the use of the Public, free of Toll." In the years 1838,² 1839,³ 1840⁴ and

Select Committee on Metropolis Improvements, 1836.

Select Committee on Metropolis Improvements, 1838, 1839, 1840 and 1841.

¹ Royal Commission appointed to inquire into and consider "the most effectual Means of "Improving the Metropolis and of providing increased Facilities of Communication within the same."

P. 4 First Report, 1844, Parliamentary Paper, (15), XV, 1.

² Select Committee appointed by the House of Commons. February 12th, 1838, "to take into "consideration the several Plans for the Improvement of the Metropolis, concerning which a Report "was made to this House by a Committee in the year 1836, together with any other Plans for the "same object which they may deem deserving of consideration, and to report their Opinion as to the "expediency of adopting any of the said Improvements, and also as to the best means of carrying "the same into effect."

Select Committee on Metropolis Improvements, 1838.

First Report and Appendix, 1838, Parliamentary Paper, (418), XVI, 1.

Second Report, Minutes of Evidence, Appendix and Plans, 1838, Parliamentary Paper, (661), XVI, 9.

³ Select Committee appointed by the House of Commons, February 12th, 1839, "to take "into consideration the several Plans for the Improvement of the Metropolis, concerning which "Reports were made to this House in the years 1836, 1837, and 1838, together with any other "Plans for the same object which they may deem deserving of consideration, and to report their "Opinion as to the expediency of adopting any of the said Improvements, and also as to the best "means of carrying the same into effect."

Select Committee on Metropolis Improvements, 1839.

First Report, Minutes of Evidence, Appendix and Plans, 1839, Parliamentary Paper (136), XIII, 459.

⁴ Select Committee appointed by the House of Commons, January 27th, 1840, "to take "into consideration the several Plans for the Improvement of the Metropolis, concerning which "Reports were made to this House in the years 1836, 1837, 1838, and 1839; together with any "other Plans for the same object which they may deem deserving of consideration; and to report "their Opinion as to the expediency of adopting any of the said Improvements; and also, as to the "best means of carrying the same into effect."

Select Committee on Metropolis Improvements, 1840.

First Report, Minutes of Evidence, Appendix and Plans, 1840, Parliamentary Paper, (410), XII, 1.

Second Report, Minutes of Evidence, Appendix and Plans, 1840, Parliamentary Paper, (485), XII, 117.

1841¹ Select Committees of the House of Commons were appointed for the carrying out of similar duties.

Royal Commission of 1842.

28. In 1842, (23rd Nov.), a Royal Commission was appointed to inquire into, and consider, "the most effectual Means of Improving the Metropolis, and of "providing increased Facilities of Communication within the same." This Commission made a series of Reports between the years 1844 and 1851.²

Metropolis Management Act, 1855.³

Reorganisation of the Metropolitan Parishes.

29. About this time the importance of having some central authority was recognised, especially in connection with questions of health as affected by the drainage of the Metropolis, and in 1855 the Metropolis Management Act⁴ was passed. Under this Act, the vestries and parishes were reorganised, and certain parishes were formed into Districts, for each of which there was a District Board of Works. The Metropolitan Board of Works was called into existence, and in it were vested the main sewers, while it was at the same time given power to make street improvements, and authorised to make application to Parliament when necessary for this purpose. By a subsequent Act, the Metropolis Management Amendment Act, 1862⁵, the Vestries and District Boards of Works were authorised to make street improvements with the consent of the Metropolitan Board of Works.

18 & 19 Vict., c. 120.

Creation of Metropolitan Board of Works.

Ib., sec. 144.

Improvements made, and expenditure incurred, by the Metropolitan Board of Works.

30. The Metropolitan Board of Works gave its attention to the opening of new lines of communication and the widening of thoroughfares, and the expenditure which it incurred for these purposes, and the sums recovered up to the date on which it ceased to exist, 1889, are shown in the following table⁶ :—

25 & 26 Vict., c. 102, sec. 72.

—	Expenditure.	Recovered.	Net Cost.
	£.	£.	£.
Widening Thoroughfares - - - -	5,275,164	1,281,859	3,993,305
Construction of New Thoroughfares - -	7,023,453	3,344,463	3,678,990
Victoria, Chelsea, and Albert Embankments	3,060,872	619,775	2,441,097
Totals - - -	15,359,489	5,246,097	10,113,392

Plate IV, Vol. V.

The two chief new thoroughfares constructed were Queen Victoria Street and Shaftesbury Avenue.

The Metropolitan Board of Works also made grants amounting to £1,004,086⁴ sterling to other authorities in aid of the cost of various street improvements, besides a grant of £500,000⁴ in aid of street improvements carried out by the Metropolitan and Metropolitan District Railway Companies in connection with the completion of the "Inner Circle" Railway.

¹ Select Committee appointed by the House of Commons, April 27th, 1841, "to take into consideration the several Plans for the Improvement of the Metropolis, concerning which Reports were made to this House in the years 1836, 1838, 1839, and 1840, together with any other Plans, for the same object, which they may deem worthy of consideration; and also the Petitions presented to this House for the purchase of the interests of the proprietors of Waterloo, Southwark, and Vauxhall Bridges, in order to their being immediately opened to the use of the Public free from Toll; and to report their Opinion as to the expediency of adopting any of the said Improvements, and also as to the best means of carrying the same into effect."

Report, 1841, Parliamentary Paper (398), IX, 601.

² First Report, Minutes of Evidence, Appendix and Plans, 1844, Parliamentary Paper, (15), XV, 1.

Second Report, Minutes of Evidence, Appendix and Plans, 1845, Parliamentary Paper, (348), XVII, 1.

Third Report, Minutes of Evidence and Appendices, 1845, Parliamentary Paper, (619), XVII, 341.

Fourth Report and Minutes of Evidence, 1845, Parliamentary Paper, (627), XVII, 439.

Fifth Report, Minutes of Evidence, Plans and Appendix, 1846, Parliamentary Paper, (682), XXIV, 321.

Sixth Report, Minutes of Evidence, Plans and Appendix, 1847, Parliamentary Paper, (861), XVI, 349.

Seventh Report, Minutes of Evidence and Appendices, 1851, Parliamentary Paper, (1356), XXIX, 387.

⁴ Compiled from Mr. Gomme's Appendix No. 5, Statements L, M and N, pp. 108-9, Vol. III.

⁵ Mr. Gomme, Appendix No. 5, p. 86, Vol. III.

⁶ Short title by Short Titles Act, 1896.

Plate IV,
Vol. V.

31. The London County Council, since it was established in 1889, has either carried out, or is engaged in carrying out, street improvements, estimated to cost £11,946,007¹ gross, with "recoupment" amounting to £5,812,878,¹ the net cost being £6,133,129.¹

Expenditure undertaken by the London County Council.

Plates
XVIII and
XIX, Vol.
V.

Of the works undertaken by the London County Council, by far the most important is the new street from Holborn to the Strand ("Kingsway"), the gross cost of which is estimated at £4,866,000², and the net cost at £774,200.²

New street from Holborn to the Strand.

Of the cost of the improvements made by the London County Council, a portion is in some cases paid by the Metropolitan Borough Councils concerned. On the other hand, the County Council has agreed to contribute £861,000³ towards the cost of various minor improvements carried out by other authorities.

The average width of the new streets constructed, and thoroughfares widened, by the late Metropolitan Board of Works was about 60 feet.⁴ In the case of similar works carried out by the London County Council the average width is slightly greater, being 62½ feet.⁵

Average width of new Metropolitan streets and improved thoroughfares.

32. We are not in a position to give the exact figures of the amounts spent by the City on street improvements; but, subsequently to the year 1760, the Corporation of the City of London spent £4,745,965⁶ out of the proceeds of the Coal and Wine Duties, mainly upon street improvements. The most important of these undertakings were the Holborn Valley Viaduct and improvements connected therewith (£1,571,000),⁷ approaches to London Bridge (£1,021,421), and the formation of a new line of streets from St. Paul's Cathedral to King William Street (£540,000).

Expenditure by the Corporation of the City of London.

In addition, the Corporation of the City spent from Corporation funds since the year 1800, £169,173⁸ mainly on street improvements, and since 1824, £2,428,854⁹ from the Bridge House Estates Trust funds on the bridges under its control.

There was also expended on street improvements by the Corporation or their predecessors, the late Commissioners of Sewers, out of the Consolidated Rate,¹⁰ between 1851 and 1902, the sum of £5,616,219, of which £1,801,456¹⁰ was recovered by way of "recoupment," leaving £3,814,763¹⁰ as the net expenditure; of this amount £591,576¹⁰ was contributed by the late Metropolitan Board of Works, £187,379¹⁰ by the London County Council, and £43,000¹⁰ by the Corporation from funds under their control, other than the Consolidated Rate, the balance being met from that rate.

The number of streets in the City of London which have been improved at different times is very great, the authorities thereof being able to take advantage of opportunities of making such improvements at a minimum cost under the operation of the Act of 1817, 57 Geo. 3, c. xxix, (commonly known as Michael Angelo Taylor's Act) without having to meet the expense and delay involved in the promotion of Private Bills in Parliament. We think that similar powers should be conferred upon the London County Council to whom at present the Act does not extend.¹¹

Operation of the provision in Michael Angelo Taylor's Act enabling the City to acquire property compulsorily without application to Parliament.

General
Paving
(Metropolis
Act, 1817).
"An Act for
"better pav-
"ing, im-
"proving
"and regu-
"lating the
"Streets of
"the Metro-
"polis, and
"removing
"and pre-
"venting
"Nuisances
"and Ob-
"structions
"therein."

History of the Construction of Railways in London.

33. For all practical purposes the history of the use of mechanical means of locomotion in London begins with the construction of the first steam railway in the latter portion of the first half of the nineteenth century.

The main railway lines with termini in London.

¹ Mr. Gomme, Appendix No. 5, Statement P, p. 113, Vol. III.

² Mr. Gomme, Appendix No. 5, Statement P, p. 111, Vol. III.

³ Mr. Gomme, Q. 4174, Vol. II.

⁴ Mr. Gomme, Appendix No. 5, p. 85, Vol. III.

⁵ Mr. Gomme, Appendix No. 5, Statement P, p. 113, Vol. III.

⁶ Mr. Murray, Appendix No. 44, Statement A (a), p. 508, Vol. III.

⁷ For total cost of Holborn Valley Improvement see Mr. Murray, Appendix No. 44, p. 504, Vol. III.

⁸ Mr. Murray, Appendix No. 44, Statement A (b), p. 508, Vol. III.

⁹ Mr. Murray, Appendix No. 44, Statement A (c), p. 509, Vol. III.

¹⁰ Mr. Bates, Appendix No. 69, Table E, p. 687, Vol. III.

¹¹ Mr. Gomme, Appendix No. 5, p. 87, Vol. III.

Railway construction in England was left to private enterprise, and, in the first instance, a number of railways of comparatively limited extent were promoted for construction in the neighbourhood of London, which, by a process of amalgamation, have been reduced to the following ten main line railway systems which now have termini in London :—

- (1) The London, Tilbury and Southend Railway ;
- (2) The Great Eastern Railway ;
- (3) The Great Northern Railway ;
- (4) The Midland Railway ;
- (5) The London and North-Western Railway ;
- (6) The Great Central Railway ;
- (7) The Great Western Railway ;
- (8) The London, Brighton and South Coast Railway ;
- (9) The South-Eastern, and London, Chatham and Dover Railways ;
- (10) The London and South-Western Railway.

Railway
Plan, p. 78.

*Special provision
not made in the
early days for
urban and suburban
traffic.*

34. In the earlier days of the construction of railways, special importance was attached to the carrying of goods ; and the great increase of passenger traffic, and especially of urban and suburban traffic, which has since taken place, was not foreseen.

On this account it was considered that the termini of the main lines serving London might be placed at some distance from the centre without causing inconvenience. This course was adopted to avoid interference with valuable property, and congestion of traffic in the thoroughfares, as well as to protect generally the comfort of the inhabitants of London. At later dates some of the termini were allowed to be placed closer to the centre.

The questions that were prominently brought forward in the earlier days of railway construction were :—

- (1) The expediency of constructing a great central station in London ;
- (2) The expediency of keeping the termini of the main lines outside the thickly inhabited area ;
- (3) The expediency of connecting the main lines by railway communication lying outside the metropolitan area.

*No central
authority con-
trolled the introduc-
tion of railways
into London.*

*Royal Commissions
and Select Com-
mittees were em-
ployed for this pur-
pose.*

*The Metropolitan
Board of Works.*

*The Royal Com-
mission on Metro-
politan Railway
Termini, 1846.*

*Exclusion of rail-
ways from a
central area.*

35. At that time the only municipal authorities existing in London were the Corporation of the City of London, having jurisdiction over rather more than a square mile of the central area, and a number of vestries and parishes which were unfitted and unable to deal with great questions of metropolitan improvement. In the absence of an authority having jurisdiction over the whole of London, the questions connected with locomotion seem largely to have been left to be disposed of by occasional Royal Commissions or Select Committees of Parliament, assisted by the Corporation of the City of London and the Board of Trade. The first attempt at the creation of an authority possessed of wider jurisdiction was the establishment of the Metropolitan Board of Works in 1856 : the powers and authority of this body in connection with the construction of railways were extremely limited.

36. The Royal Commission, which was appointed on April 2nd 1846,¹ reported against a project for a great central station in London and recommended : " That on the North of the Thames, no Railway now before Parliament or projected be permitted to come within the limits² described in " our Instructions."

Report of
Royal
Commission
of 1846,
p. 21.

They found that the proportion of short distance passengers by the main lines was small, and that the probable demand for the accommodation of short distance traffic would not justify the sacrifice of property, or the expenditure that would be involved in the placing of the termini in crowded centres.

Ib., p. 5.

¹ The Royal Commission "appointed to investigate the various Projects for Establishing "Railway Termini within or in the immediate Vicinity of the Metropolis." Minutes of Evidence and Appendix, 1846, Parliamentary Paper, (719), XVII, 1.

² The limits were described on pp. 2 and 3 of the Report as being "the Edgware-road from "Oxford-street to the intersection of the New-road ; the New-road and the City-road to Finsbury-square ; Bishopsgate-street ; London Bridge ; High-street, Borough ; Blackman-street ; Borough-road ; Lambeth-road ; Vauxhall-road ; Vauxhall Bridge ; Vauxhall Bridge-road ; Grosvenor-place ; and Park-lane." See Plate III, Vol V.

Report of
Royal Com-
mission of
1846, p. 21.

The same Commission recommended: "That if at any time hereafter it should be deemed advisable to admit Railways within those limits, this should be done in conformity with some uniform plan, carefully laid down under the authority of Your Majesty's Government, and sanctioned by the wisdom of Parliament; and that under no circumstances should the Thoroughfares of the Metropolis, and the property and comfort of its inhabitants, be surrendered to separate schemes, brought forward at different times, and without reference to each other."

Recommendation that railways should only be allowed in this area in accordance with a comprehensive plan.

ib., p. 7.

37. They were of opinion that if for any reason the railways were allowed, at a subsequent date, to come within the limits stated, there would be great congestion on the thoroughfares in connection with the termini, and that extensive street improvements would be required, and they expressed their views in the following words: "But if hereafter anything should lead to the admission of Railways, or Railway Termini, within that portion of the District submitted to our investigation which lies North of the Thames, and if any Company, or number of Companies, should be willing to under-

ib., p. 8.

take wholly, or partially, the execution of such Street improvements as we have adverted to, we are of opinion that it will be to the advantage of all parties, that these should be planned and prescribed to the companies, and finally carried out under the authority of some Department of Your Majesty's Government, in conjunction with the Corporation of the City of London, or with the local Authorities of the District in which the works are to take place."

Recommendation that the construction of railways in the central area should be combined with a scheme of street improvements.

"We give this as our opinion, because we consider that the merit of the Street improvements of London, in regard as well to their utility and beauty as to the economy and convenience with which they can be carried out, must greatly depend upon their being executed with one intention, and as part of one well-considered scheme; and because we see no security for this, if they are left to originate with different Railway Companies, according as these may spring up, and without any other supervision than that supplied by Parliamentary Committees."

Objection to piecemeal improvements

ib., p. 21.

38. They also stated that a communication between the railways approaching London on the north and south sides of the River, and a connection between them and the docks was desirable, and should be effected by a railway encircling the Metropolis, crossing the Thames at some point west of Vauxhall Bridge, and not coming within the limits that have been mentioned on the north side of the Thames.

Recommendation of railway connecting the main lines and the docks.

39. In 1855 a Select Committee of the House of Commons was appointed¹ to inquire into the State and Condition of the several Communications to and in the Metropolis including the Bridges over the Thames."

Select Committee on Metropolitan Communications 1855.

The Committee made the following remarks in the beginning of their report:

Report of
Committee,
of 1855,
p. iii.

"Your Committee find that the requirements of the existing traffic of the Metropolis far exceed the present facilities provided for it; that the rapid increase of that traffic is constantly adding to the amount of inconvenience and loss thus caused; that, enormous as the increase has been, it is and must continue to be kept seriously in check by the want of means for its natural expansion; and that it has become indispensable to make provision in this respect for the future on a great and comprehensive scale, and with the least possible delay."

Recognition of the great increase of traffic;

and recommendation that provision be made for future wants "on a great and comprehensive scale."

ib., p. iv.

40. In addition to recommending street improvements on a considerable scale, this Committee suggested that the different metropolitan railway

¹ Select Committee appointed March 13th, 1855, "to inquire into the State and Condition of the several Communications to and in the Metropolis, including the Bridges over the Thames, and the Approaches thereto; to report whether the Communications and Approaches are adequate to the present and increasing Traffic to and in the Metropolis; if not, the best mode of Improving the same, and whether it will be desirable to have one or more Bridges over the Thames, and where; and the best mode, out of Local Funds, of providing the Cost of such Bridges, and of Improving the said Communications and Approaches, and throwing open to the Public the Toll-paying Bridges."

Report Minutes of Evidence, Appendix and Plans. 1855. Parliamentary Paper, (415), X, 1.

termini should be connected by railway with each other, with the docks, the river and the Post Office. The main object which the Committee had in view in making this recommendation was the acceleration of the mails, and the taking of all through traffic, not only of passengers, but, in a still more important degree, of goods, off the streets. The Committee added :

Report of Committee of 1855, p. iv

Recommendation for the establishment of a central authority.

"Your Committee are of opinion, that until some authority is established in the Metropolis sufficiently comprehensive to give effect to improvements in the communication, laid down on a scale adequate to the existing and prospective wants of the traffic, little can be done by the interposition of the Legislature in this matter. They, therefore, desire to express their satisfaction at the prospect of a Metropolitan Board of Works being shortly established, with power to carry out those changes which the existing state of London renders it impossible much longer to postpone."

Ib., p. iv.

The tenor of their report shows that the great importance of improving the facilities for the growing urban and suburban passenger traffic had been forced on the attention of the Committee, and that it was clearly recognised that what was required was a central authority, with wide jurisdiction, and possessed of sufficient powers, to enable it to carry out extensive improvements.

First underground railway.

41. About the same time the question of intra-metropolitan railways had come to the front,¹ and in 1854 and 1855 a line was sanctioned connecting Paddington Station with Farringdon Street, the railway to be laid in an open cutting where possible, and underground where the open cutting was impracticable : the first section of this line was opened in 1863.

Select Committee on Metropolitan Railway Communication, 1863.

42. In the same year, in view of the proposals for new railways that had been laid before Parliament, a Select Committee of the House of Lords was appointed to consider the question of Metropolitan railway communication. The terms of appointment were as follows:—"to inquire whether any, and, if any, which of the Schemes now before Parliament for the Construction of Lines of Railway within the Limits of the Metropolis, can be proceeded with in the present Session without risk of interfering with the future Adoption of a comprehensive Plan of Metropolitan Railway Communication; and to consider what Provision can be made for the securing such a comprehensive System, with the greatest Advantage to the Public, and the least Inconvenience to the local Arrangements of the Metropolis."

Recommendations of the Committee of 1863.

43. This Committee recommended :

- (1) An extension³ of the limits of 1846 within which the ordinary railways were not to be allowed to enter.
- (2) That there should not be a central station.
- (3) That underground railways should be preferred within the "Metropolitan Railway District."⁴
- (4) That heavy traffic in goods, especially minerals, could as a general rule be most conveniently carried from the railways lying

Third Report, p. iii, p. iv.

¹ Mr. Gomme, Appendix No. 5, Statement B, p. 95, Vol. III.

² First Report, 1863, Parliamentary Paper, (500), VIII, 1.

Second Report, 1863, Parliamentary Paper, (500 I), VIII, 5.

Third Report, Minutes of Evidence and Appendix, 1863, Parliamentary Paper, (500 II), VIII, 9.

³ The new limits (*see* page iii., § 1, of the Third Report) were to be as follows : "Commencing at the Barking-road Station of the North Woolwich Branch Railway ; thence along that and the Great Eastern Railway to the Lea-bridge Station ; thence in a straight line to the Seven Sisters Station, on the Great Northern Railway ; thence in a straight line to the eastern end of the Hampstead Tunnel of the Hampstead and City Junction Railway ; thence along such Railway to its junction with the West London Railway ; thence in a southern and eastern direction along the West London and West London Extension Railway, across the River Thames, to the junction with the London, Chatham, and Dover Railway ; thence along the London, Chatham, and Dover Railway to the Brixton-road Station ; and thence, in a straight line to the Lewisham Junction Station of the Mid Kent Railway ; and thence in a straight line to the Barking-road Station of the North Woolwich."

⁴ The "Metropolitan Railway District" is defined on p. iii. of the report to mean the Metropolis.

north of the Thames to the railways lying south of the Thames by lines not passing through the central portions of the Metropolis.

(5) That there should be a line of railway on the east of the Metropolis connecting the railways north and south of the Thames.

(6) That there should be additional facilities on the west side of the Metropolis for minerals and goods traffic passing north and south of the Thames.

(7) That additional railway communication was needed in the densely populated parts of the Metropolis, and railway communication between the main lines of railway.

(8) That the Great Eastern Railway terminus might be placed nearer the centre, and be placed in communication with the lines to the west of the Metropolis.

(9) That the main stations of other lines should not come further in, but that one or more railways should be made to carry passengers from different parts of London to the main stations of the long lines.

(10) That a line such as that which is now known as the "Inner Circle" was desirable, and that it might be undertaken in connection with the construction of new streets in conjunction with the Metropolitan Board of Works or the municipal authorities of the City. An "Outer Circle" Railway was also recommended.

(11) That every system of internal railway communication for the Metropolis should be under one management.

(12) That a Commission should *not* be appointed to consider the whole subject of the making of railways in the Metropolis. The reasons for this decision were :

(a) That the appointment of such a Commission would involve delay ;

(b) That the decision of the Commission would probably not be accepted by Parliament as conclusive ; and

(c) That difficulty would be experienced in getting any plan proposed by the Commission carried out.

(13) That a Select Committee should be appointed at every Session, before the Second Reading, to consider and report on all Bills for railways within the "Metropolitan Railway District."

(14) That the Board of Trade should make, soon after the commencement of each Session of Parliament, a general report relating to all proposed railways and works connected with railways which affect the "Metropolitan Railway District."

(15) That the Metropolitan Board of Works and Commissioners of Sewers for the City might present reports to Parliament on all Bills, if they thought it necessary to do so.

(16) That all Bills relative to railways within the "Metropolitan Railway District" should originate in one House, and be grouped together and referred to the same Select Committee.

44. The last four of the recommendations stated in the preceding paragraph indicate that comprehensive as well as expert examination of the railways proposed for London was felt to be necessary, and that the Committee were of opinion that the different schemes brought forward by promoters, in haphazard fashion, ought not to be considered and dealt with by Parliament independently of each other.

Necessity for special examination of the various proposals for the construction of railways recognised.

45. In 1864 a Joint Select Committee¹ was appointed to consider the

Joint Committee on Railway Schemes (Metropolis), 1864.

¹ The Select Committees appointed by the House of Lords and the House of Commons "to consider the best method of dealing with the Railway Schemes proposed to be sanctioned within the limits of the Metropolis by Bills to be introduced in the present Session; and to report their Opinion whether any, and if any, what Schemes should not be proceeded with during the present Session, and to whom were referred a Report by Colonel Yolland, to the Lords of the Committee of Privy Council for Trade, on the Metropolitan Railway Schemes proposed by Bills in the Session of 1864; and also the Reports of the Select Committee of the House of Lords of last Session on Metropolitan Railway Communication."

Report, Minutes of Evidence and Appendix, 1864, Parliamentary Paper, (87), XI, 241.

very large number of railway schemes affecting the metropolitan area that were then before Parliament. It was on the advice of this Committee that the system of railways known as the "Inner Circle" was sanctioned by Parliament,¹ though it was not finally completed till 1884.²

Summary of early incidents of railway construction.

46. It will be seen from what has just been stated that, in the early days of railway construction in London, there was no authority that gave continuous attention to the subject, and that the great increase of urban and suburban traffic which has since taken place was not foreseen, and, as a consequence, was not provided for. The policy generally approved was the placing of the termini of the main lines outside the crowded area, the making of railway connection between these lines along routes passing through the outskirts of London, and the connecting of the termini, as far as possible, by an inner circle railway north of the Thames and passing underground where necessary.

47. The Select Committee of 1855 recognised the continuous increase of local traffic, but, up to 1867, the local traffic of London appears to have been light, as compared with what it subsequently became, even after making allowance for the increase of population. Supra, par. 39.

Growth of local traffic.

As illustrating the great growth of local traffic in "Greater London," we may mention that in 1867 the local railways carried 40,547,398³ passengers, and the two principal omnibus companies 41,424,428;³ the corresponding figures for 1901 are 236,506,162³ and 269,933,759,³ while in the same year the tramways carried 340,772,414³ passengers.

Increase of suburban traffic on the main lines of railway.

48. The suburban traffic of the main lines has largely increased since the dates to which we have referred, and has proved a source of difficulty in working them owing to the great cost of increasing the number of tracks and obtaining additional terminal accommodation.

"The Inner Circle;"

49. The "Inner Circle" Railway system, which, in effect, was recommended by the Select Committee of 1863, is owned and worked by two companies, the Metropolitan Railway Company and the Metropolitan District Railway Company, and, from these railways, branches have been made into outlying districts, so that the whole system now carries a very large amount of suburban as well as urban traffic. Supra, par. 43.

Causes which impair its usefulness as a means of carrying urban traffic.

Owing to this system having been originally planned with the object of connecting the termini of the main lines, it is not situated in the best position for dealing with urban traffic, and the trains coming on to it from the various extensions, and from certain main lines, interfere with the expeditious carriage of such traffic.

"Tube" railways.

50. The next great step in the provision of means of mechanical transport in London was the adoption of the "tube" railway system, in which the rails are laid in an iron-lined deep level tube, for the construction of which the existence of a stratum of clay underlying London affords unusual facilities. This system was adopted on account of the great cost of "shallow" underground railways, such as those of the "Inner Circle," and in order to get rid of the objections to the interference with property which the construction of such railways involved. All the deep level lines are worked by electricity. The first line of this class² was authorised in 1884, and the first portion of it was opened in 1890: it is known as the City and South London Railway.⁴ The Central London Railway⁴ was authorised in 1891, and was opened in 1900. Railway Plan, p. 78.

¹ Under two Bills, viz., the Metropolitan District Railways (No. 2) Bill and the Metropolitan Grand Union Railway (No. 2) Bill, consolidated under the title of the former, the name of which was ultimately changed into the Metropolitan District Railway Bill.

² Mr. Gomme, Appendix No. 5, Statement B, p. 95, Vol. III.

³ Mr. Harper, Appendix No. 6, Table 5, p. 127, Vol. III.

⁴ Mr. Gomme, Appendix No. 5, Statement C (a) p. 96, Vol. III.

51. In 1892 a Joint Select Committee¹ was appointed to consider the best methods of dealing with "the Electric and Cable Railway Schemes" to be introduced into Parliament during that Session, and the terms and conditions under which the subsoil should be appropriated.

Joint Select Committee on the Electric and Cable Railways (Metropolis), 1892,

This Committee recommended that, in the case of private property not under the public streets, the companies should be allowed to acquire a way-leave, instead of purchasing the freehold of the land, subject to the terms of the Land Clauses Acts as to compensation, and that, in the case of public streets, companies should be empowered to pass under the streets at sufficient depth without payment of compensation for the way-leave. In consideration of such free passage the Committee advised that the companies should be put under obligation to furnish an adequate number of cheap and convenient trains.

recommended way-leaves in the case of "tube" railways passing under property.

52. The Waterloo and City Railway was authorised in 1893 and opened in 1899;² the Great Northern and City Railway was sanctioned in 1892 and opened for traffic in 1904;³ the Baker Street and Waterloo Railway and the Charing Cross, Euston and Hampstead Railway were sanctioned in 1893, and are now under construction;⁴ the Brompton and Piccadilly Circus Railway was sanctioned in 1897,⁴ and the Great Northern and Strand in 1899:⁴ the two latter have since been amalgamated under the name of the Great Northern, Piccadilly and Brompton Railway,⁴ and are now being constructed; the City and Brixton Railway was sanctioned in 1898,⁴ and the North West London Railway in 1899.⁴

Progress in the sanction and construction of "tube" railways.

53. In 1901 a large number of projects for the construction of "tube" railways came before Parliament and a Joint Select Committee was appointed to report on them and on certain general questions in connection with underground railways.

Joint Select Committee on London Underground Railways, 1901.

In presenting its report this Committee⁵ made the following observations:—

"The question of underground railways in London and the suburbs and of their working is so complicated, and of such importance, from a financial as well as traffic point of view, that the Committee are disposed to agree with the views of the Corporation of the City of London and the London County Council, that in some way there should be a more direct control and supervision of all projects for such underground railways. Whether this should be effected by the supervision of some Public Department as the Board of Trade, or by some body like the Light Railways Commission, or by a Joint Committee of Members of both Houses of Parliament, appointed at the beginning of each

Recommendation of more direct control and supervision of underground railways in London.

¹ Appointed "to consider the best method of dealing with the Electric and Cable Railway Schemes proposed to be sanctioned within the Limits of the Metropolis by Bills introduced or to be introduced in the present Session, and to report their opinion as to whether underground Railways worked by electricity or cable traction are calculated to afford sufficient accommodation for the present and probable future traffic; as to whether any and which of the Schemes propose satisfactory lines of route; as to the terms and conditions under which the subsoil should be appropriated; and whether any, and, if any, what Schemes should not be proceeded with during the present Session."

Report, Minutes of Evidence and Appendix, 1892, Parliamentary Paper, (215 Sess. 1), XII, 1.

² Mr. Gomme, Appendix No. 5, Statement C (a), p. 96, Vol. III.

³ Mr. Gomme, Appendix No. 5, Statement C (b), p. 96, Vol. III.

⁴ Mr. Gomme, Appendix No. 5, Statement C (b), p. 97, Vol. III.

⁵ Appointed to consider and Report:—

"1. Whether the lines of route for underground railways in and near London, proposed by Bills which have been or may be introduced during the present Session, are best calculated to afford facilities for present and probable future traffic; and, if not, what modifications of those lines of route are desirable:

"2. What special provisions, if any, should be made for the protection of the owners, lessees, and occupiers of properties adjacent to underground railways from possible damage and annoyance:

"3. What special terms and conditions, if any, as to construction and working should be imposed upon the promoters:

"4. Whether any, and which, of the schemes proposed by the said Bills should not be proceeded with during the present Session."

Report, Minutes of Evidence and Appendix, 1901, Parliamentary Paper, (279), VI, 427.

" Session, to consider all projects affecting the relief and distribution of traffic in or near London, is a question which appears to them to deserve serious consideration.

Necessity for economy.

Municipal authorities to be empowered to assist.

" The railways should be constructed on sound economical principles and without undue inflation of capital. It is obvious that if dividends are to be paid on inflated capital, fares to produce such dividends must be on a scale higher than would be required to pay a fair remunerative interest on the money expended on the works. The Light Railways Act gives power to the local authority to construct or to assist in the construction of light railways, and the Committee are of opinion that some such power given to the Corporation of the City of London and the county councils concerned, in respect to London underground railways would be of the greatest advantage. They therefore recommend that the Board of Trade should insert in each Bill a model clause based upon that in the Light Railways Act, with such modifications as may be necessary, giving powers to the City Corporation or the county councils in the counties in which the railways would be constructed, either to construct or to aid in the construction of the lines.

Ib. p. ix.

" Such powers would enable the councils to encourage, by subsidy or otherwise, the prolongation of railways into districts thinly populated, and therefore suitable for the relief of congested districts, whereas, in many cases at any rate, a public company would not feel justified in extending their line till the population became greater.

Suggestion for inquiry into merits of railways laid in shallow tunnels immediately under the roadways.

" It has indirectly been brought to the notice of the Committee that another system of underground locomotion, namely, that of subways or shallow tunnels immediately under the surface of the roadways, has been successfully developed and is in process of further extension, both on the Continent and in America.

" The Committee have heard no evidence with regard to this system; but in view of the large amount of capital involved in the schemes now before Parliament, and the importance of utilising it to the best public advantage, the Committee recommend that an early inquiry should be held by the Board of Trade upon this system."

Special protection for the owners of property against damage caused by the working of underground railways.

54. The general questions connected with the construction of "tube" railways still remain in the stage in which they were left by the report of the Joint Select Committee of 1901, with the exception that it has become the practice to insert in Bills, for the construction of "tube" railways, a clause placing the company under a liability to pay compensation for damage to property caused by the working of such railways, although no portion of the property of the owner had been acquired for the purpose of the railway: this provision had reference to the vibration¹ caused by the running of trains on the Central London Railway, a difficulty which has since been dealt with by an amendment in the method of traction.

"Tube" railways constructed without full consideration of the wants of London.

No proper control over the general plan of such railways.

55. It will be obvious from what has just been said that the deep-level railways as they exist in London have been designed and laid down in accordance with the proposals of different promoters, without special examination beforehand of the whole problem, and without continuous control by a single authority. The Metropolitan Board of Works was abolished in 1889, and the London County Council was established in the same year, but the latter body was not given any authority in connection with railways proposed to be constructed in the Metropolis. The con-

¹ On this point reference may be made to the Report of the Central London Railway (Vibration) Committee appointed by the Board of Trade to consider and Report to what extent the working of the traffic on the Central London Railway produces Vibration in the adjacent Buildings, and what alterations in the conditions of such working or in structure can be devised to remedy the same. Report, 1902, Parliamentary Paper, (Cd. 951), XXIII, 495.

struction of such railways was left to private enterprise, and the promoters obtained their authority to construct by means of Private Bills. The reference to the Joint Select Committee of 1901, and the remarks which we have quoted from the report of that Committee, show clearly the nature of the evils that were caused by the non-existence of a competent central authority. The London County Council had no power to control the construction of such railways, and an attempt to exercise, in the interests of the public, such control as is possible by formal opposition to Private Bills does not give satisfactory results, while it adds to the cost of the undertaking, and tends to produce a state of antagonism between the companies and the Council, which is greatly to be regretted, and is detrimental to the public interests.

Antagonism between London County Council and private promoters.

It appears from the above history of London railways that various Royal Commissions and Select Committees have made recommendations of a very drastic character. Among other things, they have advised that all London railways should be laid out on a uniform and comprehensive scheme instead of by isolated projects; that each system of internal railway communication should be under one management; that, before the Second Reading, all London Railway Bills should be considered and reported upon by one Select Committee; that, after the Second Reading, they should be grouped together and referred to the same Select Committee; that "tube" railways should be allowed to acquire way-leaves instead of buying land; that there should be some more practical supervision of all projects for underground London railways; that authority to assist or construct underground railways should be given to the London County Council and the Corporation of the City of London, so that such power might be used to relieve congested areas, and to move the people out to more thinly populated districts. It is impossible to overlook the importance or significance of these recommendations.

Various recommendations in the past in regard to London railways.

History of the Construction of Street Tramways in London.

56. The first Act of Parliament for the construction of a street tramway in London was passed in 1869,¹ and other Acts authorising extensions and new tramways have been passed in almost every year since that date. The first tramways were worked by horse power, but all tramways authorised in recent years provide for electric traction, and the horse tramways which still exist will be converted to electric tramways as occasion offers.

First Act for the construction of a tramway in London passed in 1869.

57. Since the creation of the London County Council that body has adopted the general policy of owning, constructing and working all tramways in the County of London; and, with that object, purchases the lines owned by the various companies as opportunity offers.

Policy of the London County Council.

Some of the tramways however owned by the London County Council are at present leased to a working company.²

In "Greater London," outside the County of London, the practice as to the ownership and working of tramways varies: in some cases the local authorities own and work the tramways; in others they own but do not work them; other tramways are both owned and worked by companies.

Tramways outside the County of London.

58. The construction of tramways in the Administrative County of London is hampered in many ways; the Corporation of the City of London exercises its right of "veto" upon the construction of tramways, within the City, on the ground that the Corporation are, and have been, of the opinion that the streets of the City are unsuitable for tramways; the

"Veto" of City Corporation.

¹ Mr. Benn, Appendix No. 7, p. 237, Vol. III.

² The North Metropolitan Tramways Company. Mr. Benn, Appendix No. 7, p. 247, Vol. III.

"Veto" of London County Council against private promoters.

"Veto" of Metropolitan Borough Councils.

Construction of tramways hindered by existence of narrow streets congested with traffic.

Objection to tramway termini in streets.

Absence of through communication by tramway.

Extent of the tramway system in London.

Tramway mileage of London very limited.

Interchange of traffic.

London County Council in its capacity as local authority "vetoes" the proposals of all private promoters in the County of London;¹ some of the Metropolitan Borough Councils are opposed to the construction of tramways, and they all possess the right of "veto." Even when a Metropolitan Borough Council is not opposed to the construction of a tramway, difficult questions regarding the apportionment of the cost of street widening in connection with the construction of the tramway, not infrequently arise between the Metropolitan Borough Council and the London County Council.

The narrowness of the streets in some parts of London and the amount of traffic make it inexpedient to place tramways in them. As a consequence the tramway system of London is very imperfect; through communication by tramways cannot be provided, and termini are often placed in crowded streets, a most undesirable practice, which causes great congestion at particular hours, materially limits the carrying capacity of the tramways, and gives rise to serious risk of accident to persons and vehicles. There is no through communication by tramway between the north and south of the Thames, or between the tramway systems of the east and west.

59. From the evidence of Mr. W. H. Dickinson,² it appears that, in May, 1903, the tramway route mileage in the County of London was 115½ miles. Of this mileage, the London County Council had either purchased, or had given notice of their intention to purchase, some 99½ miles. There remained 16½ miles to be purchased, all of which would be purchaseable in or before the year 1911. The London County Council was actually working 39½ miles south of the Thames, and, to this, would be added 11½ miles which the Council was about to purchase. In addition, out of the 99½ miles 48½ miles north of the Thames were leased to, and worked by, a company.³ The tramway mileage in London is extremely small, having reference to its area and population, as compared with that of other great cities.

Difficulties have already arisen, and others will be experienced in the immediate future,⁴ in connection with interchange of traffic between the tramways within and those at or beyond the limits of the County of London.

¹ Sir J. C. Robinson, Appendix No. 82, pp. 832-3, Vol. III.

² Mr. Dickinson, Appendix No. 3, p. 40, Vol. III.

³ The North Metropolitan Tramways Co. Mr. Devonshire, Appendix No. 68, p. 659, Vol. III.

⁴ Sir J. C. Robinson, Appendix No. 82, p. 826, Vol. III.

Vol. VII, Report of Advisory Board, pp. 75 et seq..

Ib., p. 75.

Plates X, XI, XII, Vol. V.

PART II.

IMPROVEMENT OF THE MEANS OF LOCOMOTION AND TRANSPORT NECESSARY IN LONDON, AND RECOMMENDATIONS AS TO STREET IMPROVEMENTS, TRAMWAYS, RAILWAYS, TRAFFIC REGULATIONS, AND OTHER MATTERS.

CHAPTER IV.

IMPROVEMENT OF THE MEANS OF LOCOMOTION AND TRANSPORT NECESSARY IN LONDON.

Increase of Street Accommodation and Improvement of the Means of Locomotion and Transport Necessary ; and Question One of Cost.

60. WE proceed to consider the first of the two questions upon which we have been directed by your Majesty to report: "As to the measures which the Commission deem most effectual for the improvement of the means of locomotion and transport in London by the development and inter-connexion of Railways and Tramways on, or below, the surface; by increasing the facilities for other forms of mechanical locomotion; by better provision for the organization and regulation of vehicular and pedestrian traffic, or otherwise."

The evils to be met are undoubtedly becoming more serious every year. There is great delay and congestion in the vehicular traffic inside London, and great difficulty in conveying passenger traffic each morning and evening into and out of the Metropolis. The population is becoming larger, and the number of those who live outside and come into London daily for their work is increasing, and will tend still more to increase, unless the natural movement from crowded centres to the more open country outside, so desirable for economic and sanitary reasons, is arrested from want of facilities for locomotion. It is not only mitigation of the existing evils that is needed, but provision to meet the growing wants of the future and prevent a repetition of the mistakes that have been made in the past.

The difficulties connected with questions of locomotion are increasing.

61. If considerations of money could be disregarded, it would be easy to apply the remedy at once, by taking in hand a vast scheme for remodelling the congested parts of the Metropolis—wide thoroughfares to connect all parts of London—tramways on a very large scale on widened thoroughfares—railways underground, radiating in all directions into the country, and there meeting lines which should distribute passengers throughout the adjoining areas.

Considerations of cost.

These measures supplemented by strict regulations in regard to all future buildings would solve the problem, and there is no physical obstacle that could not be easily overcome by engineering skill: the difficulty is simply one of money.

There can be no doubt that the cost of all improvements in London must be very heavy, even where land is comparatively cheap; in some districts, where the value of land is enormous, the cost is almost prohibitive. Hitherto railway improvements have been effected by private enterprise in the expectation of a commercial profit. Tramways have been constructed both by municipal and by private enterprise, also in the expectation of profit; but the burden of street improvements of late years has fallen almost wholly upon the rates, and, however great the indirect advantages, this class of work cannot show any direct pecuniary return.

62. We have been furnished with a tabular statement of the sums expended by the late Metropolitan Board of Works and by the London County Council upon street and bridge improvements within the last fifty years. The gross amount (in a few cases estimated) is £27,305,496.¹ "Recoupment," by the sale of land or materials, brings down the net cost, which has fallen on public resources, to the sum of £16,246,521,¹ or, approximately,

Fifty years' expenditure.

¹ Mr. Gomme, Appendix No. 5, Statements L, M, N and P, pp. 108-113, Vol. III.

£325,000, per annum, on the average for the fifty years. During the last fifteen years, the average expenditure has been very considerably more than the average of the last fifty years, and the debt charge for street improvements, bridges, tunnels, embankments, ferries, etc., upon the County Rate of the Administrative County of London, for the year 1902—3, was £659,521, which is equivalent to a rate of 3·94d. in the £ on the assessable value in April, 1902:—this debt charge includes sinking fund. In addition to this outlay, the Corporation of the City of London have also expended very large sums, of which some particulars have already been given.

New sources of revenue.

We have been informed by the London County Council that, although the traffic requirements of London in respect of widening and opening streets have not been nearly met, the existing charge is as high as the rate-payers can bear.¹ The London County Council are of opinion that, if they cannot find some new source of revenue, the necessary improvements will be seriously checked. The only new source of revenue they recommend is the taxation of land values, not exceeding 4d. in the £, which, on the basis of the total land value of 1896, they estimate would yield about £250,000 a year.² Whether local taxation of that kind, either in the form proposed or in any other form, would produce the required revenue, or would be justifiable in itself, is a question upon which we do not enter; it has not been referred to us, and we have not taken evidence on the subject. Other witnesses have recommended³ a renewal of the Coal and Wine Duties, which yielded shortly before their abolition about £500,000 yearly,⁴ and would, no doubt, yield considerably more at the present time. Upon this proposal also, it is not our business to express any opinion.

Means of reducing cost already sanctioned.

"Betterment."

63. It has long been recognised that land, taken for the purpose of improvement, should be paid for, at its value, before the improvement was undertaken, so as to protect the local authority from having to pay for the benefit it creates by its own expenditure. In addition, Parliament has, in recent years, sanctioned the insertion in Improvement Acts of a clause enabling the local authority to obtain, by the imposition of a special rate, some portion of the increased value to neighbouring property caused by reason of the improvement.⁵ This principle, known as that of "betterment," has not as yet been sufficiently tested by results in London, and it is perhaps premature to speculate upon the pecuniary advantage that the authority executing the improvement may derive from this source.

Purchase of excess land.

"Recoupment."

Another method has also been sanctioned by Parliament of diminishing the net cost of street improvements. In some cases power has been given to take lands, in excess of the quantity actually required for the projected work in order that the improving authority may "recoup" itself, in part, by appropriating the full enhanced value. A notable instance of this is the case of the Holborn to the Strand Improvement, now approaching completion.⁶ In that case, a considerable area of land, on either side of the new street, has been secured by the London County Council, with results which are estimated as follows:—The total cost of the new street, which does not exceed 1,100 yards in length, and of the land purchased in connection with it, is estimated at £4,866,000,⁷ and the London County Council expect to "recoup" themselves to the extent of about £4,091,800⁷ sterling, largely, because they have acquired so much land, and hope to realize its increased value. But, whatever pains be taken, to secure for the community the benefit of enhanced values created by its own expenditure, the net cost must be heavy. Rates, as is well known, have risen rapidly within the last 15 years. In 1890 the average total rates made for the City and County of London amounted to 5s. 2·3d.⁸ in the £. In 1904 they amounted to 7s. 1·5d.⁸ During this period the rateable value of the Administrative County of London rose from

Plates
XVIII,
XIX,
Vol. V.

Cost of the Holborn to the Strand Improvement.

In any case cost must be heavy.

Increase in the rates.

Appendix G,
Vol. IV.

¹ Mr. Gomme, Qq. 4259, 4431, Vol. II.

² Mr. Gomme, Qq. 4203, 4211, 4303, Vol. II.

³ Mr. R. W. Perks, M.P., Qq. 19865, 19969, 20008. Sir J. Whittaker Ellis, Bart., Q. 23864.—Vol. II.

⁴ Appendix No. 85, p. 859 *et seq.* Vol. III.

⁵ Mr. Young, Appendix No. 12, Statements B and C, pp. 318 and 2, Vol. III; and Qq. 7241 *et seq.* Vol. II.

⁶ Mr. Gomme, Qq. 4315 *et seq.* Vol. II.

⁷ Mr. Gomme, Appendix No. 5, Statement P, p. 111, Vol. III.

⁸ Mr. Harper, Appendix No. 6, p. 193, Vol. III.

£31,777,015¹ to £41,086,974.² It is evident therefore that considerations of finance must be carefully weighed in any proposals for improvement.

64. It will be convenient to consider the measures for improving locomotion and transport in London under four separate headings: "Street Improvements"; "Tramways"; "Railways"; and "Traffic Regulations and Other Matters."

CHAPTER V.

RECOMMENDATIONS AS TO STREET IMPROVEMENTS.

Suggestions Received by the Commission.

65. At the root of the problem of London locomotion lies the fact that many of the streets of London are too narrow, not a surprising fact when it is remembered how London grew without method or control. It affects all kinds of locomotion in a greater or less degree. Vehicles move more slowly because they move in a too confined space; so much so that we learn that the speed of vehicles³, such as omnibuses and cabs, falls from, about 8 miles an hour while the streets are fairly free, to about 4½ miles an hour during the busy hours of the morning and afternoon. It is more difficult, on the crowded surface, to find room for tramways, and more difficult to find room for railways, just beneath the surface, in addition to the numerous lines of pipes which are there already. No argument is needed to show that immediate action is necessary to secure that all streets, to be constructed hereafter, shall be of sufficient width. That can be provided for by regulations. It is equally clear, that, if it be practicable to pierce new arterial streets and to widen existing streets, every kind of locomotion will be facilitated; the question is, how far it is practicable to do this, and how fast it can be done. *Narrowness of the streets.*

66. In the course of evidence a great number of suggestions have been put forward by witnesses with a view to improving the streets and relieving congestion: making roads in different directions out of London⁴; constructing a circular road about 7½ miles in length, at a radius of 12 miles from St. Paul's⁵; providing alternative streets parallel to crowded thoroughfares, and new streets⁶; removing factories from London⁷; together with a multitude of particular works in the way of widening,⁸ have been pressed on our attention. We are much indebted to the gentlemen who thought out and explained to us these various projects; they involve enormous expenditure, but we do not think it necessary to enter upon them, because the Advisory Board of Engineers, whom we appointed to advise on matters connected with engineering, have furnished a report, which was compiled after full consideration of all these proposals, and embraces all the proposals that require particular notice. Their report, with numerous plans and diagrams, is, as we have stated, printed at length in Volume VII, and the accompanying Appendix to it in Volume *Suggestions of witnesses.*

¹ The Administrative County as constituted at that date.

² The Administrative County as altered by the London Government Act, 1899. The valuations in this case include alterations in the rateable value for 1904 up to June 1st, 1905.

³ Mr. Poind, Q. 17769 *et seq.*, Vol. II. Mr. F. Francis, Q. 15183, Vol. II; and Appendix No. 46, Tables F and G, pp. 528-9, Vol. III. See also Mr. Harper, Appendix No. 6, Table 11, p. 134, Vol. III.

⁴ Mr. Jeffreys, Q. 18162 *et seq.*, Vol. II; and Plate LXX g, Vol. VI.

⁵ Mr. R. W. Perks, M.P., Q. 19868, Vol. II; and Plate LXXXI, Vol. VI.

⁶ Mr. Fitzmaurice, Q. 6325 *et seq.*, Vol. II; and Plates XX, XXI and XXII, Vol. V. Mr. Dixon, Q. 9889, Vol. II; and Plate XXVIII, Vol. V. Mr. Bradley, Q. 13050 *et seq.*, Vol. II; and Plate XXXVI, Vol. VI. Sir Henry Knight, Q. 14443, 14511 *et seq.*, Vol. II; and Plate LII, Vol. VI. Mr. Meik, Q. 15606 *et seq.*, Vol. II; and Plates LVII—LXVII, Vol. VI. Mr. Brereton, Q. 23577, Vol. II; and Plates CIII a and b, Vol. VI. Mr. Mathews, Q. 22645, 22649, 22679 *et seq.*, Vol. II; and Plate XCIX, Vol. VI. Sir J. Whittaker Ellis, Barr., Q. 23849, 23881 *et seq.*, Vol. II; and Plate CIV, Vol. VI. Mr. J. H. Robinson, Appendix No. 17, p. 370, Vol. III. Mr. Dixon, Appendix No. 18, p. 378, Vol. III.

⁷ Col. Yorke, Q. 819. Mr. Burgess, Q. 5941 *et seq.*, Sir R. D. Little, Q. 16041—Vol. II.

⁸ Mr. J. H. Robinson, Q. 9822, Vol. II; and Plate XXVII, Vol. V. Mr. Dixon, Q. 9880 *et seq.*, Vol. II; and Plate XXVIII, Vol. V. Mr. Harrison, Q. 10196 *et seq.*, Vol. II; and Plate XXIX, Vol. V. Sir Henry Knight, Q. 14511 *et seq.*, Vol. II; and Plate LII, Vol. VI. Mr. Mathews, Q. 22656 *et seq.*, Vol. II; and Plate XCIX, Vol. VI. Sir J. Whittaker Ellis, Barr., Q. 23885 *et seq.*, Vol. II; and Plates CV a and b, Vol. VI.

VIII. We direct special attention to this report, inasmuch as it contains, not only a careful analysis of the statistics of traffic in London, but also a full description of, and reasons for, the various proposals which they recommend. As their report *in extenso* accompanies this Report, we shall here confine ourselves to a general view of the proposals laid before us, both in that report, and in the evidence of witnesses who have appeared before us. It will be convenient, at this stage, to describe the main proposals, with regard to street improvements, which the Advisory Board of Engineers have presented.

*Proposals of
Advisory Board
of Engineers.*

67. The projects put forward by the Advisory Board of Engineers are based upon the view, that those entrusted with the duty of providing for the wants of London, in years to come, ought to have before them a carefully thought out plan, and definite principles upon which they should work. They instance the case of Paris, important sections of which city were gradually remodelled and new parts laid out, between the years 1793 and 1889, in general accordance with schemes elaborated in 1793 and again in 1854.¹ It stands to reason that any plans, however skilfully devised, which aim at taking effect over a long period of time, may in some degree require modification, in the light of experience, or owing to change of conditions: the point is to secure that, in future, new streets shall be constructed, and improvements in old streets shall be effected, not haphazard and piecemeal as hitherto, but in relation to the general needs of London, and in pursuance, so far as possible, of a fixed policy, which should be followed with persistent effort over a great length of time. Property could be acquired under advantageous conditions, and other preparatory steps taken, as opportunity might offer, if this course were adopted.

Acting upon this view, the Advisory Board of Engineers have embodied in their report the following conclusions, among others, which are reserved for notice hereafter:

Width of streets.

(1.) That new streets or widened streets should be laid out according to the following standard of widths from house to house, depending upon their importance, and the degree to which they are likely to attract traffic:—

"Main Avenues" - - - - -	140 feet.
"First-class Arterial Streets" - - - - -	100 feet.
"Second-class Streets" - - - - -	80 feet.
"Third-class Streets" - - - - -	60 feet.
"Fourth-class Streets" - - - - -	40 or 50 feet.

The width in each case includes footways on either side, and no street should be less than 40 feet wide.

This standard of width is intended to be applied within London, and also in the suburbs.

We agree in this conclusion, and are further of opinion that, as land comes into use for building in any part of "Greater London," provision should be made for an adequate width of streets, especially in connection with through traffic, and that the necessary powers should be given by Act of Parliament.

*Necessity for
a comprehensive
plan.*

(2.) That street improvements should be undertaken in conformity with a carefully considered plan, designed to meet the requirements of through traffic, which may be carried out over a long series of years: we agree in this conclusion also.

68. The Advisory Board of Engineers do not themselves lay down any such comprehensive plan, as is referred to in the last paragraph: it must be undertaken by those responsible for the work, and must, of necessity, involve prolonged and minute consideration; but they have, by way of illustration, indicated a number of improvements which they think necessary, and have explained in their report the grounds of their opinion. The list does not

Vol. VII,
Report of
Advisory
Board, p. 3.

Plans 2,
3, 4 and 5,
Appendix
to Report of
Advisory
Board, Vol.
VIII. E 1

Vol. VII,
Report of
Advisory
Board,
Table
XXIII,
p. 33.

Ib., p. 35
et seq.; and
Street Plan,
p. 40,
hereof.

¹ For details of dimensions and the history of streets in Paris see "Nomenclature des Voies Publiques et Privées":—Ville de Paris:—Dressée sous la direction de M. Bouvard, Directeur Administratif des Service d'Architecture et des Promenades et Plantations:—Par M. Beck, Géomètre en Chef. Paris:—Imprimerie Chaix.

For comparative and graphical statistics see "Le Livre Foncier de Paris, (Deuxième Partie), 1902." [Préfecture du Département de la Seine:—Direction Municipale des Travaux du Cadastre de Paris]. Paris:—Imprimerie Chaix.

purport to be exhaustive, but does include the bulk of the works which they regard as important. We summarise these improvements and add the comments that seem to be required.

Street Plan,
References
"A" & "B."

Vol. VII,
Report of
Advisory
Board,
pp. 35,
et seq..

69. By far the most important of their recommendations is a proposal for the construction of two Main Avenues through London, one from west to east to connect Bayswater Road with Whitechapel, and passing through the City of London in the neighbourhood of London Wall, the other from north to south to connect Holloway with the Elephant and Castle, passing by a new bridge across the Thames near the western boundary of the City. The precise route which these avenues should follow is not definitely fixed, and would have to be laid out when the time for construction comes. Each avenue would be 140 feet in width, from house to house, with subways for water mains and so forth, and would afford space for cellarage under the footpaths. It is also intended that there should be four lines of tramway on the surface, and four lines of railway a few feet below the surface, so as to allow express trains and local stopping trains to be run on different rails. Both tramway and railway are intended to be worked by electricity.

Main Avenues.

The design is that the tramways on each of these Main Avenues should be connected with the tramway systems at both ends, and also afford interchange of traffic with the various systems of tramways crossed on the route, so as to provide through communication with all parts of London and its suburbs. In the same way, the four lines of electrical railway in the sub-structure would be connected with the various systems of the railway companies. Arrangements could be made for through running, and thus railway, as well as tramway, communication throughout London would be facilitated.

ib., p. 36.

The Advisory Board of Engineers attach more importance to the west and east Main Avenue than to the one running north and south, partly, because the volume of traffic to the east and west is greater, and partly, because the north to south avenue would not afford accommodation for traffic to and from the docks, as the former avenue would at night; and it is worthy of notice that, upon several occasions in the past, Select Committees of Parliament have drawn attention to the necessity of providing better means of communication through London from east to west. We find also that Colonel Haywood, the engineer to the Commissioners of Sewers of the City of London, recommended, in 1867, a similar street within the boundaries of the City.¹

70. We entertain no doubt, that both the Main Avenues above suggested, would be of great value in relieving the congestion in the streets of London, and in providing much needed facilities for locomotion, not only on the surface, but by bringing a complete system of railway and tramway lines through the City and central area of London. At the same time, it is necessary to dwell upon the very heavy outlay that would be involved in these schemes; they are moreover schemes, each of which is complete in itself, and cannot be carried out piecemeal, involving, as each does, much sub-structure. We must, therefore, consider each of them as a work which, once taken in hand, will have to be carried out without interruption.

*Heavy cost of
Main Avenues.*

In considering the cost we are warned by the Advisory Board of Engineers that it is impossible to arrive at any very trustworthy figures, in the absence of careful alignment and detailed surveys and estimates; and, when it is remembered that the east and west avenue is to be four and three-quarter miles long, and the north and south avenue about four and a quarter miles long, it is obvious that there would be a wide margin for error, even in the most skilfully prepared estimates.

¹ "Report to the Select Committee of the Worshipful the Committee upon Improvements of the Corporation of the City of London in relation to the Traffic of the City and the Improvements needed in the Public Ways, by William Haywood, M.Inst.C.E., F.R.I.B.A., Engineer and Surveyor to the Commissioners of City Sewers, 27th February, 1867." London:—Printed by John King and Company, Limited, 63, Queen Street, Cheapside, E.C.

We gather from the report that the east and west avenue, with its subways, railways and tramways, would involve a net cost of about £15,550,000, upon the rough calculations that are alone possible at this stage, and that the north and south avenue would cost about £8,550,000 net. This amount represents £24,100,000 sterling for the two avenues; but other estimates, which they quote, point to the probability that the net cost would be considerably higher. On the other hand, the full effect of "recoupment" and "betterment" would reduce it, and some pecuniary return would be received from the tramways and railways.

Vol. VII,
Report of
Advisory
Board,
pp. 36-38.

*Possible direct
financial return
on the expenditure.*

71. If we suppose that a sum of 30 millions sterling would accomplish this work at present prices, it would probably require £1,100,000 to £1,200,000 a year to cover interest and sinking fund charges in respect of the borrowed money. In return for the outlay, the municipality would own 9 route and 36 track miles of tramway, and 9 route and 36 track miles of underground railway, putting aside the immense advantages of two great thoroughfares. The tramways would bring in a considerable profit whether worked or leased by the municipality, as they would not only have a large traffic of their own, but would add greatly to the value of other tramway systems by connecting them completely with the central area and the City of London. As there would be 18 miles of double tramway on the two avenues, it may safely be anticipated that a very considerable revenue would be derived from them. The railways would be also a source of revenue, though it is difficult to conjecture the amount. They are intended to be a connecting system, not only between the great main lines, but also between the suburban lines. Constructed, as they would be, with separate rails, for fast through traffic, and for slower local traffic, it can hardly be doubted that they would prove of incalculable benefit by adding to the facilities for locomotion in London.

72. Something may be learned by the experience of New York.¹ In that city an underground railway, generally a few feet beneath the surface, with similar accommodation for express and local trains, has been constructed at the expense of the municipality, under a contract for construction and operation. The municipality has granted a long lease of the subway to the constructing company, which agrees to pay an annual rent, sufficient to defray interest and sinking fund, on the municipal bonds issued by the municipality for construction of the work. Railway companies in London, whose lines could be connected by the projected enterprise, might be willing to make such arrangements as would insure some substantial return upon the capital outlay.

Appendix
A, Vol. IV.

73. Another method of meeting the financial difficulty of constructing these two Main Avenues has been suggested, viz., an extensive purchase of back lands near one of the selected routes at present values. This would be, in short, a great land speculation beyond any ordinary improvement proposals for "recoupment," involving a very heavy present expenditure, although it has been suggested it would prove remunerative.

*"Recoupment" by
purchase of land at
present values.*

Unless the municipality can obtain some new sources of revenue, or can come to satisfactory terms in advance with railway companies, or can see their way to some such land scheme as above suggested, it is not likely that it will be prepared, for a long time, to undertake works of this magnitude, which would, undoubtedly, absorb so much of its resources, that little or nothing would be left for the many other improvements that are constantly required.

*Other works should
not be retarded for
the sake of the
Main Avenues.*

74. It must be understood that the Advisory Board of Engineers do not themselves put forward their scheme of new avenues as a project for immediate accomplishment under existing conditions. They desire that its great utility should be realised, and that it should find a place in a general plan for the future development of London, as means and opportunity offer. We recognise its utility to the full, and agree that it should find a place

¹ See Annual Reports of the Board of Rapid Transit Railroad Commissioners of New York City: First Report, 1900-1901; Second Report, 1902; Third Report, 1903.

in the general plan, if further careful study of the project, from all points of view, shows that it is financially practicable. We do not, however, think that works of less magnitude, which may be within available resources, should be retarded in the expectation of its early accomplishment.

Street Plan,
Reference
"C;"
Vol. VII,
Report of
Advisory
Board,
p. 39.

75. Passing from the Main Avenues, other works in different parts of London are suggested by the Advisory Board of Engineers in their report with the general object of opening freer communication between important districts.

The Euston and Marylebone Roads from King's Cross to Stafford Street, a distance of about two miles, are, in places, much contracted. A continuous street of the first-class might be provided without excessive expense, and would afford additional accommodation for the great railway termini in that district. Along this line, there are many forecourts and gardens, between the street and the line of houses, still unbuilt upon, and it is of great importance to prevent any further building upon these spaces, so as to secure an adequate width for the street when the task of widening can be taken in hand. The report recommends also the continuation of the new first-class street from Marylebone Road to the Edgware Road, facing the Harrow Road.

*Euston and
Marylebone Roads.*

Ib., p. 40;
Street Plan,
Reference
"D."

76. In another part of London, the widening of Constitution Hill is suggested, so as to give full effect to the projected opening of the road between the Mall and Charing Cross. If that were done, a much needed route would be opened, capable of accommodating a great amount of traffic from Charing Cross to the wide space in front of St. George's Hospital. This would ease the congestion in Cockspur Street, Pall Mall, St. James's Street and Piccadilly.

Constitution Hill.

Ib., pp. 40,
41;
Street Plan,
Reference
"F" and
"E."

Ib., p. 41;
Street Plan,
Reference
"G."

77. With a view to relieving Parliament Street, Charing Cross and Trafalgar Square, the report advises that a wide thoroughfare should be constructed along Prince's Street, Westminster: vehicles coming from Victoria Street could then pass by Storey's Gate—which could be moved a little westward—along the east side of St. James's Park, and thence, either along the Mall, or by an inclined road to be constructed beside the Duke of York's Column into Waterloo Place.

*Prince's Street,
Westminster.*

Ib., p. 46;
Street Plan,
Reference
"O."

78. Only one arterial street improvement in London south of the Thames is specifically alluded to, if the north and south Main Avenue be excluded, viz., the widening of Wandsworth Road from Putney to Lambeth, a distance of nearly five miles. Here, again, the most pressing necessity is to prevent new buildings being erected, beyond the future frontage lines, which would make the work of widening, to the proper standard, more costly.

*Wandsworth
Road.*

Ib., pp. 41-
46;
Street Plan,
References
"I," "J,"
"K," "L,"
and "N."

79. The main approach roads to London on the south of the Thames and from the east and north were conceived on wider views than those on the west and south-west; and the Advisory Board of Engineers draw special attention to four main lines of thoroughfare giving access to the west and south of London: the Bayswater Road; the Hammersmith Road; the Fulham Road; and the King's Road—Chelsea; including in the case of the Hammersmith Road, King Street—Hammersmith. These roads are particularly important, not merely because of the great traffic which they already carry, and its probable increase, but also because they are routes specially suited for tramway service. We are told that they ought to be widened to the dimensions of a first-class street, that is, 100 feet. In any case, these four roads appear to require attention, without delay, at certain points: immediate steps ought to be taken to prevent any building taking place, beyond the future frontage lines, nearer to the existing roadway than the present line of houses; the longer these precautions are neglected, the greater will be the cost of widening.

*Bayswater Road,
Hammersmith
Road, Fulham
Road, King's
Road—Chelsea.*

Ib., p. 47;
Street Plan,
Reference
"P."

80. No other suggestions of the Advisory Board of Engineers, with regard to arterial roads, require notice, except one relating to Brentford, which lies outside the Administrative County of London, where Brentford High Street, which is the main road from London to Hounslow, Slough, Maidenhead, Reading and the West of England is so contracted by buildings, on both sides, that the width is only nineteen feet between the kerb-stones. This is an extreme instance,

*Brentford High
Street.*

but other examples may be found of the like evil in different suburban districts. In the Brentford case, it is obvious that, either an alternative route should be provided, or else that the existing street should be widened.

*Congestion at
places of cross
traffic.*

81. The report also draws attention to the delay and congestion which admittedly exist at places where vehicles going in different directions cross each other. We have already adverted to this serious nuisance, and to the amount of time which is lost in consequence. The Advisory Board of Engineers have, in their report, prepared complete analyses and diagrams of the traffic at certain points, and suggest specific works to relieve this congestion at three places, as examples :—

*Blackfriars
Bridge.*

At Blackfriars Bridge they would commence a viaduct at the centre arch and carry it north down the centre of New Bridge Street and Farringdon Street to terminate in Farringdon Street between Farringdon Avenue and Plum Tree Court: this viaduct would give a roadway of 33 feet. We do not enter upon the engineering particulars, but the work would involve widening the roadway of Blackfriars Bridge, and also widening Farringdon Street, and the cost is estimated at £700,000. The object of this improvement, as explained by the Advisory Board of Engineers, is, not only to relieve the congestion at Ludgate Circus, and the congestion between the Victoria Embankment and Queen Victoria Street, but also to bring the tramways from the south side of the Thames across both points, and to connect them directly with the City in Farringdon Street, and join them with the northern system of tramway lines. We think it necessary to point out that Blackfriars Bridge is the property of the Bridge House Estates Trust, a trust under the control of the Corporation of the City of London.

*Ib., p. 63 ;
Street Plan,
Reference
" Q."*

*Wellington Street,
Strand.*

The second of the places, referred to in the report, is at Wellington Street, Strand, where the congestion of traffic at the junction with the Strand is excessive. At this point the report suggests a bridge across the Strand from the hill of Wellington Street, on the north, to the north end of Waterloo Bridge, on the south. The cost of this work is estimated at £325,000, after allowing for "recoupment."

*Ib., p. 64 ;
Street Plan,
Reference
" R."*

Piccadilly.

The third suggestion is intended to relieve the notorious congestion in Piccadilly, where it is crossed by the north and south traffic from Berkeley Street and St. James's Street. The Advisory Board of Engineers recommend a sunken road, which should be made from Berkeley Street passing under Piccadilly: this would involve the purchase of valuable private property. No estimate of the cost of this improvement is given.

*Ib., p. 64 ;
Street Plan,
Reference
" S."*

Other examples.

82. While giving the illustrations above noticed of works for the purposes of facilitating cross traffic, the Advisory Board of Engineers allude to other places where similar relief is needed, such as at the Marble Arch, the north and south ends of Tottenham Court Road, Piccadilly Circus, Oxford Circus and the Elephant and Castle; and this list is by no means exhaustive.

*Ib., p. 65.
Street Plan,
Reference
" T."*

Relief in such cases could be afforded, either by raising or sinking one of the existing roads, or by enlarging the central space where the different lines of traffic converge. In most of the cases mentioned immediately above, the last named method would be the most suitable, as may be realised by observing how slight, by comparison, the interruption is at places like Trafalgar Square, Parliament Street and Hyde Park corner.

Recommendations : (a) Street Improvements.

*Above proposals
are merely
examples.*

83. We have now referred to the chief structural alterations and improvements in London, which are given by the Advisory Board of Engineers, as examples of what is required to be done in London. In a few cases, they furnish an approximate estimate of the cost, but, for the most part, they have given no estimate, nor is it reasonable to suppose that they could do so, without a far more complete survey than time has allowed. It is needless, however, to observe that the outlay must be very great before these works are accomplished. Those who are familiar with London will at once perceive, what the Advisory Board of Engineers themselves point out, that although the suggested improvements probably cover the most striking defects, there are others which have not been specified. For example, little is said in their report with regard to the eastern and south-eastern parts of London, and, though the main roads in those quarters are on the whole wider and more convenient, there are undoubtedly places where great

congestion occurs, and where improvements will be found necessary. The same remarks apply to the suburban districts, of which, with the exception of the case of Brentford, no mention is made.

84. We think all the proposals just referred to are valuable, and would produce beneficial results, and that they deserve careful examination by the authorities who may have to deal with the traffic of London, and find the necessary money, in order that the cost and disadvantages may be weighed against the benefits. We cannot commit ourselves to a final recommendation without fuller investigation than it has been practicable for us to undertake. They do not constitute, as does each of the Main Avenues, one great work which must be carried to completion as a whole. They can be executed one by one as resources become available. We are strongly impressed with the mischiefs arising from the present state of things, and feel that a considerable sacrifice of money would be justified in order to amend it.

Those who may have the responsibility of effecting improvements in the future will, of course, have to make their choice, and may possibly find that priority has to be given to other works more urgent than those which have been specified; but, upon the information available to us, we feel justified in making the following recommendations:—

That, so far as practicable, a preference should be given to such street improvements as are indispensable for the development of a complete system of tramways throughout London. The whole question of tramways is dealt with in the next chapter of our Report, and it is sufficient to say, for the present, that we attach great importance to them as a means of locomotion.

That, in regard to other improvements, those that will relieve the congestion at important places, where traffic crosses in different directions, should be speedily taken in hand.

That steps be taken at once for the purpose of preventing the creation of further obstacles to the future widening of existing streets, with proper provision for compensation where legal rights are infringed. Some change of the law may be required for this purpose. The object aimed at is apparent, viz., to prevent gardens and forecourts from being built upon hereafter along streets where a greater width than the present is desirable.

Street improvements should be such as to facilitate extension of the tramway system.

Relief of congestion, where lines of traffic cross, of special importance.

Measures in anticipation of future widenings.

(b) *Building Laws.*

85. We have already dealt with the question of street improvements; we now propose to consider the question of the proper laying out of streets when ground, previously unoccupied by houses, is being built upon. It is owing to neglect in this respect that the question of providing facilities for locomotion is one of such extreme difficulty in the present day. In so far as the land has already been built upon, improvement in the Building Laws, by which we mean the enactments, and bye-laws made thereunder, which regulate the construction of new buildings and formation of new streets, cannot be expected to provide any considerable immediate effect; but building is continually going on in the suburbs, and no time should be lost in arranging that all new streets shall be laid out in accordance with a proper plan, and that they all shall be of sufficient width.

Building Laws in the case of land not yet built upon.

86. The Building Laws applicable to the Administrative County of London are contained in the London Building Act, 1894, and the London Building Act, 1894, (Amendment) Act, 1898, and are practically uniform, there being only a few exceptional provisions having reference to the City.

Existing Building Laws require amendment.

Outside the Administrative County of London, however, the Building Laws locally applicable¹ are, either not uniform, or are not uniformly applied, and do not, in our opinion, make sufficient provision for the requirements of the future. We have not thought it necessary to take special evidence in connection with this matter, as it is one which can only be dealt with satisfactorily after separate and careful inquiry, but the question is referred to in the evidence² of Mr. William Ivey, who appeared before us on

¹ The principal public Acts are:—the Public Health Act, 1875, (38 & 39 Vict., c. 55); the Public Health (Buildings in Streets) Act, 1888, (51 & 52 Vict., c. 52); the Public Health Acts Amendment Act, 1890, (53 & 54 Vict., c. 59); the Private Streets Works Act, 1892, (55 & 56 Vict., c. 57).

² Mr. Ivey, Qq. 20662 et seq., Vol. II.

behalf of the Corporation of West Ham, and we think it will be of advantage to indicate the nature of the changes which appear to us to be expedient.

as they do not make sufficient provision for through communication.

87. Sufficient provision is not made to ensure that new streets and roads shall be laid out so as to give sufficient through communication by means of main roads: the main thoroughfares leading from London to the adjoining counties have never been laid out with reference to any general plan, and are in many respects very unsatisfactory.¹ The yearly increase in the number of houses, erected in new and narrow streets, throws additional work on the main roads, for which they are not fitted. The importance of having suitable main roads leading out of London will increase every year, owing to the general growth of traffic, the increase in the number of motor vehicles, and the extension of tramways.

Suggestion as to Building Laws in districts surrounding the County of London.

We recommend that the Building Laws, and bye-laws made thereunder, in "Greater London," outside the Administrative County of London, should, as far as practicable, be made uniform; that the power to define frontages should be given to all local authorities; and that new streets or roads should not be taken over by the local authorities until sufficient provision has been made for main roads. In the case of roads that have not yet become streets, a sufficient width free of building should be reserved to provide for future requirements. Special provision will be required to meet cases where an undue proportion of the land devoted to building would be required for the construction or improvement of main roads. In such cases, a fixed percentage of the land proposed to be built upon might be set aside for new streets without payment of compensation, additional land, if required, being paid for at its market value. The same provisions might, with advantage, be applied to building operations, on land still unoccupied, and situated within the limits of the Administrative County of London.

Special provisions.

In case of dispute between the local authority, and the proprietors of the land, or other persons interested in the construction of new buildings or the formation of new streets, an appeal should lie to the Traffic Board, to the establishment of which we refer in Part III. of our Report; and its decision should be final.

Want of "Building Plan."

88. In certain foreign cities, suburban land must be laid out for building under the control of a central authority, and the absence of some such controlling authority has undoubtedly led to much evil in this country. We entirely concur with the following observation of the Advisory Board of Engineers:—

"At the present time, in the absence of some controlling authority, the width of roads in many of the suburbs is defined merely with reference to local convenience and the wishes of the owners of building sites. In these cases we see being enacted under our eyes the same want of provision for arterial necessities and of thought for the future under which the Metropolis itself is suffering at the present time."

Vol. VI.
Report
Advisory
Board,
p. 47.

(c) *Main Roads Leading Out of London.*

Main thoroughfares leading out of London to the country.

89. As regards the main thoroughfares leading out of London, the proposed Traffic Board should be requested to consider the whole question, and report to the Local Government Board, stating what, in its opinion, ought to be done in the way of making new roads and improving existing roads. The report should be accompanied by an estimate of cost.

Need for uniform and concerted action.

90. Without, at present, entering upon the consideration of the second question upon which we have to report, namely, the establishment of some authority, or tribunal, to which schemes of a local character could be referred, we must point out, at this stage, that the recommendations we have made involve unity of purpose over a large area ("Greater London") in which no single authority has at present the necessary jurisdiction. Some means must, therefore, be provided for uniform and concerted action.

¹ See Report of Departmental Committee on Highways appointed by the Local Government Board "to inquire into the general condition and sufficiency of the roads in England and Wales, and to report whether any, and, if so, what, amendment of the law relating to these matters or its administration is desirable in view of the various purposes for which the roads now are, or shortly may be, utilised, and particularly whether any change of the authorities who may have control over the roads, or of their powers, is required." 1904, Parliamentary Paper, (Cd. 1793), XXIV, 279.

REFERENCE.

"A."	New Main Avenue—East to West.
"B."	" " " —North to South.
"C."	Widening of Marylebone and Euston Roads.
"D."	New Street from Marylebone Road to Edgware Road.
"E."	Extension of the Mall to Charing Cross.
"F."	Widening of Constitution Hill.
"G."	" Prince's Street, Westminster, and new Road to Waterloo Place at Duke of York's Column.
"H."	Widening of Broad Sanctuary, Westminster.
"I."	" Uxbridge and Bayswater Roads.
"J."	" Hammersmith and Kensington Roads.
"K."	" Fulham and Brompton Roads.
"L."	" King's Road, Chelsea.
"M."	Extension of West Cromwell Road.
"N."	Widening of King Street, Hammersmith.
"O."	" Wandsworth Road.
"P."	" Brentford High Street, or New Street.
"Q."	Viaduct from Blackfriars Bridge to Farringdon Street.
"R."	" " Waterloo Bridge to Wellington Street.
"S."	New Road from Berkeley Sq. to the Mall via the Green Park with branch roads to Jermyn St. and Pall Mall.
"T."	Widening of Marble Arch between Edgware Road and Park Lane.

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 "T." Widening of Marble Arch between Edgware Road and Park Lane.

St. Paul's Church, Essex, London

CHAPTER VI

RECOMMENDATIONS AS TO TRAMWAYS.

Limit-d Extent of London Tramway System.

91. In proceeding to discuss tramways and their uses in London, one fact should be made clear at the outset and never left out of sight : wherever they can be laid on existing streets, without widening, they can be made, if worked commercially, a direct source of profit—the wider and more connected the system, the greater in all probability would be the profit. *Tramways a source of profit.*

92. At the end of 1904, there were 203 route miles and 26 chains of tramways working in "Greater London," and 146 miles and 68 chains authorised, but not yet working. These figures compare very unfavourably with those of other towns in England and Scotland, as will appear by the following table :— *Mileage of existing tramways in London.*

TOWN.	Number of Inhabitants per Route Mile of Tramway in Operation.
London - - - - -	33,661
Manchester - - - - -	8,937
Leeds - - - - -	10,353
Sheffield - - - - -	11,561
Liverpool - - - - -	13,368
Glasgow - - - - -	14,216

It is notorious that in the United States of America,¹ and on the Continent of Europe, tramways have been developed to an extent far beyond anything attained in this country.

There is, of course, a large mileage of underground railways in London ; but underground railways do not serve altogether the same purpose as tramways.

Want of Through Communication by Tramway.

93. Insufficiency of mileage is not the only defect of the tramway service in London.

Within the County of London nearly the whole of the tramways are owned, and in great part are worked, by the London County Council, whose policy has been consistently directed to the exclusion of private promoters from within the County of London²; such tramways within their jurisdiction as do not already belong to them will be acquired, under existing statutory powers, in the course of a few years.³ *Policy of London County Council.*

In the districts of "Greater London," lying outside the Administrative County of London, a different policy in general prevails: the tramways are largely worked by private companies. This difference of policy would not necessarily entail inconvenience if the systems on the outside were worked in harmony with those inside, so that cars should run continuously across the frontier. Unfortunately that is not the case. The *Policy in adjoining counties.* *Interruption of service at the boundary.*

¹ See "Street and Electric Railways, 1902" (Special Report of the Census Office of U. S. A.). Washington—Government Printing Office, 1905.

² Mr. Benn, Q. 5303, Vol. II; and Appendix No. 7, p. 249 *et al.*, Vol. III.

³ Mr. Benn, Q. 5307, Vol. II; and Appendix No. 7, pp. 249 *et seq.*, Vol. III.

systems, where they meet at the frontier, are not always physically connected, and, in no case, is there through running. Accordingly every through passenger is obliged to change cars.

Defects within Administrative County of London.

Three sections with no connection.

Large area without tramway service.

Dead-end terminals

Cause inconvenience,

and loss of efficiency.

Inconveniences of existing system.

Uses of tramways.

Short distance traffic.

94. Inside the Administrative County of London itself, there are also very serious defects. Three systems of tramways are included in this area: the northern and eastern system, wholly north of the Thames; the western system, also wholly north of the Thames; and the southern system, wholly south of the Thames. All these three systems are separated from each other by long intervals, without any connection, as will be seen by a reference to the Tramway Plan; while great districts in the centre of London, including the City, the "West End," and the chief places of public resort, are entirely unprovided with tramway service. The different lines approach those districts and then break off abruptly in the middle of the street.

As a result, all the cars are obliged to discharge their passengers at dead-end terminals. At the six principal terminals (Westminster Bridge, Shepherd's Bush, Blackfriars Bridge, Aldgate, Moorgate and Euston Road), nearly a quarter of a million of passengers alight from, or join, the cars every day in the streets. Apart from the great inconvenience caused to all or most of the passengers, the result is a great congestion, both of tramcars, and of ordinary vehicular and pedestrian traffic, at these terminal points; and the same congestion, though in a less degree, occurs at the other terminals in London.

95. The Advisory Board of Engineers estimate that the carrying power of a tramway system may be diminished by about one-half by reason of the cross shunting necessary at dead-end terminals. In the absence of delay from this cause, 150 cars, or upwards, per hour, might be run on a single track, even in busy thoroughfares; but at Westminster, for example, where a number of cars from different lines converge at the Lambeth end of Westminster Bridge, the necessity for cross shunting creates so great a delay, that all the lines taken together cannot run more than 72 cars per hour in one direction, and that only under pressure.

96. It will be seen that, from every point of view, tramway accommodation is glaringly defective. In a great area, there is no tramway service at all. Where there is such a service, travellers do not obtain the full advantage which it ought to provide, in cheapness, expedition and convenience. An "end-on" break in the course of a journey probably causes additional expense (for two independent fares usually cost more than a through fare) whilst the consequent delay and discomfort, especially in bad weather, and the uncertainty of trans-shipment, are great drawbacks. Where the line abruptly terminates in the middle of crowded streets, even greater discomfort is caused, together with serious diminution of efficiency in the entire tramway service, and an intolerable congestion in the streets.¹

It is difficult to appreciate how such a state of things can have been tolerated so long. Whatever view may be held upon the expediency of extending tramways in London, it cannot be expedient to work those we have upon inefficient methods.

Advantages and Cost of Street Tramways.

97. Before determining whether new tramways ought to be recommended on a large scale, it is necessary to consider what kind of facilities tramways afford; what is their comparative cost; and what difficulties stand in the way of their extension in a city like London.

In cities of less size and population, they are found to supply a double want. They carry passengers from one part of the city to another, and are able also to carry a great passenger traffic between the city and adjoining areas, to a distance of 8 or 10 miles. In London it is probable that their

Vol. VII, Report of Advisory Board, p. 71 *et seq.*

Tramway Plan, p. 54 hereof.

Vol. VII, Report of Advisory Board, Table XLVIII, p. 75.

Ib., p. 78.

Ib., Table XLIX, p. 78.

¹ Sir A. C. Bruce, Qq. 7706 *et seq.*, Vol. II.; and Appendix No. 13, pp. 332 *et seq.*, Vol. III.; and Plates XXIV a to e, Vol. V. Mr. Waller, Q. 16087, Vol. II.

usefulness will be more restricted. They will be chiefly used for short distances in urban and suburban districts, though no doubt they may prove valuable auxiliaries for conveying passengers on longer journeys also. Three factors affect passengers in travelling, the time occupied in the journey, the cheapness of the fare, and the convenience or comfort of the means of transit. In point of time, it is likely that tramcars will not be able to traverse crowded streets faster than four or five miles an hour on an average. In point of cheapness the London County Council are carrying passengers at very low rates, and inform us that they can do so, and, at the same time, earn a profit.¹ In point of convenience, there is no doubt that this kind of travelling is very popular, when passengers can be carried near their destination, and when the service is frequent, so that they are not obliged to wait long for a car. Railways provide more rapid transit, running, as they do, upon lines free from other traffic. On the other hand, railways must charge higher fares because of the heavy cost of their construction. It is true that some railways provide workmen's trains at rates as low as, and lower² than, tramways can offer, but these trains are run only within specified hours, which necessarily causes inconvenience in some cases, and they carry only a portion of the travelling public. They are often overcrowded,³ and many workpeople, who travel by them, are obliged to start earlier than they would otherwise do, and are thus obliged to wait for some time before their work begins: some churches are opened in the morning to afford them a refuge. Nor can railways offer to the general public so much convenience as a complete system of tramways; they cannot be so multiplied as to bring travellers, as a rule, so near to their destination; they are approached generally by a flight of stairs or a lift. Experience has shown that the metropolitan railways, even where no tramways compete, practically do not attract passengers for journeys of less than a mile.⁴ We think that, if a frequent tramway service can be provided at moderate fares, it would be very largely used, in preference to a railway service, for comparatively short journeys. For longer distances, a preference would generally be given to railways, because of their speed.

Low fares.

98. Railways and tramways can, with advantage, be worked so as to supplement each other and provide a comprehensive system of locomotion. "Tubes," instead of ending as they now often do at a dead-end terminal, 70 feet beneath the surface, might be prolonged till they reach the surface, at some point in the more open country, and then be continued, on the surface, as railways or tramways to, or beyond, the suburbs, radiating in different directions, so as to collect or distribute passengers. So, also, tramways on the streets, in urban and suburban districts should, where possible, be laid out in interchange connection with main-line, "tube" and other railways, by arrangement with the railway companies. But, for the present, we must confine ourselves mainly to the use of and necessity for tramways in streets more or less crowded with traffic. Railways of any kind are not likely to compete successfully with tramways for this class of service. The competitor of the tramway will be the omnibus, propelled either by horse or mechanical power.

Connection with railway systems.

99. At present the horse omnibus provides a means of transit for short distances, but we do not think it would compete with an efficient system of tramways: it has never done so either in London or elsewhere. The horse omnibus will always serve a useful purpose in London, unless superseded by the motor omnibus, in distributing passengers where tramways do not penetrate, but we believe that on all the routes, where

Competition of omnibuses.

¹ Mr. Benn, Qq. 5539 *et seq.*, Vol. II.

² Mr. Harper, Appendix No. 6, Table No. 42, p. 175; Table No. 43, p. 178; and Table No. 49, p. 181, Vol. III. See also Report, Minutes of Evidence and Appendix of Select Committees on Workmen's Trains, 1903 and 1904, "appointed to inquire into the working and administration of The Cheap Trains Act, 1883; and to report whether any, and, if so, what amendments are reasonable and necessary to improve the service of Workmen's Trains in the Metropolis and elsewhere, and to secure the provision of the accommodation required by Workmen by all 'Railway Companies.'" Report, 1903, Parliamentary Paper, (297), VIII, 591. Report, 1904, Parliamentary Paper, (305), VII, . . .

³ Mr. A. F. Hills, Qq. 12293 *et seq.*. Sir D. Fox, Q. 13916. Mr. Gooday, Q. 18560. Mr. Ivey, Qq. 20604 *et seq.*, 20609.—Vol. II.

⁴ Sir D. Fox, Qq. 14018, 14179. Mr. Sellon, Qq. 13563 *et seq.*—Vol. II.

there is fair competition, the same thing will happen in London as happened in Liverpool between the years 1897 and 1903.¹ within a period of seven years, all the omnibuses disappeared from the streets, and gave place to electric tramcars, while the number of passengers carried was nearly trebled. These results, which have been repeated in other cities both at home and abroad, show how eagerly the public avails itself of tramway facilities.

Motor omnibuses.

Vol. VII,
Report of
Advisory
Board,
p. 86,
Table L.

100. Since we commenced our inquiry, considerable advance has been made in the use of motor omnibuses, a good many of which may now be seen in the London streets. We learn that many more will shortly make their appearance, and, in some quarters, a sanguine expectation is entertained that they will prove to be the most suitable form of vehicle for public street conveyance.² Experience alone can finally determine the limits of their usefulness. We have no doubt that, unless the cost of running and maintaining these vehicles largely exceeds the expectations of those who are now engaging in the enterprise of providing motor omnibuses, they will practically supersede horse omnibuses,³ and thus remove from the streets, greatly to the public advantage, a form of vehicle which, although it has been of great public utility, is now one of the principal causes of congestion in many streets. But we think that, on routes suitable for tramways, [where there is a large traffic, tramways will continue to be the most efficient and the cheapest means of street conveyance, and we cannot recommend the postponement of tramway extension in London on the ground of any visible prospect of the supersession of tramways by motor omnibuses.

Plate VIII,
Vol. V.

*Cost of tramways
as compared with
that of under-
ground railways.*

101. We now turn to the cost of tramways, a matter of the greatest importance. The difference in this respect between surface tramways and railways of any kind in London is enormous. Railways immediately beneath the surface, like the Metropolitan and Metropolitan District Railways, are very expensive. If the property had to be purchased at the present time in order to construct them, the cost would be absolutely prohibitive. Even if they were constructed under existing streets, and nothing were paid for land, except for stations, they might, according to the opinion of the Advisory Board of Engineers, cost a million a mile, in the more difficult parts of London, under such streets as the Strand or Fleet Street. The Advisory Board of Engineers do not, however, suggest that they would cost nearly so much as the average cost per mile in the less difficult parts, and we must observe that other estimates furnished to us, as well as the experience of similar works, actually carried out in American and Continental cities, indicate a much less expenditure, though it must be very heavy. "Tube" railways again, driven 70 or 80 feet underground, upon the cheapest system of construction, might, in the opinion of the Advisory Board of Engineers, cost from £250,000 to £300,000 per mile; but they could not be constructed so cheaply, unless the stations were few in number, the land obtained for nothing, and exceptional facilities granted for the work. On the other hand, the cost of double lines of tramways, in London, is stated by the London County Council⁴ to be £39,512, for overhead wire construction, and £52,602, for conduit construction. These figures include nothing for widening the streets, should widening be needed to admit of the construction of tramways. That indeed is the point upon which everything turns. Few would object to an extensive tramway system being laid down all over London, but for the belief that it must involve an extensive system of street widening. This is the great difficulty. The opinion is widely held that the streets of London are too narrow for tramways on a great scale. No doubt many streets are too narrow. The real question is whether this disadvantage is so widespread as to necessitate the postponement of a great tramway extension until costly operations of widening have been carried through.

Vol. VII,
Report of
Advisory
Board,
p. 108.

Ib., p. 113.

*To what extent
is street widening
necessary?*

¹ Mr. Bellamy, Q. 25591, Vol. II; and Appendix No. 83, p. 837, Vol. III.

² Mr. Duff, Qq. 25045, 25070, Vol. II.

³ Mr. Fitzmaurice, Q. 6538. Mr. Duff, Qq. 25020 *et seq.* Mr. Swinton, Qq. 25303 *et seq.*—Vol. II.

Mr. Benn, Q. 5497, Vol. II; and Appendix No. 7, p. 246, Vol. III. See these references for the items included in each case.

102. In this connection it is important to ascertain what ought to be regarded as the standard width for streets to carry tramways. The Advisory Board of Engineers do not make any definite recommendation as to the minimum width of streets on which tramways might be constructed. On such important routes as Bayswater Road, Hammersmith Road, Fulham Road and King's Road—Chelsea, they consider that a width of 48 feet, between the kerbs, or 80 feet, from house to house, is necessary, and they think that a width of 100 feet, from house to house, should be ultimately provided for such trunk roads. On the other hand, on streets which, they describe, as third-class streets, with a width of 60 feet, from house to house, where the traffic would not be so heavy, they contemplate the construction of two tramway tracks. The London County Council aim at a minimum width of 33 feet between the kerbs. We think that a greater width than 33 feet is desirable as a rule for a double line of tramway, but that, for short distances, or, in less frequented thoroughfares, even a less width may be accepted. A single line might be laid in still narrower streets, either for traffic in both directions, with passing places at intervals, or for traffic in one direction only, the cars returning by another single line in an adjacent street. Such an arrangement is common abroad, and appears to work satisfactorily. Judged by the above standards of width, many of the main thoroughfares of London will admit of tramways. Of course the decision must depend partly upon the extent to which the street is crowded, as well as upon its width. Certainly some street improvement is necessary in places, from any point of view, and we have already recommended that preference should be given, as far as possible, to improvements which would widen roads intended for tramways, but we are persuaded that a great deal can be done in the way of tramway extension, without any great expense of this kind.

Proper width of streets for tramways.

Tramways Recommended by Advisory Board of Engineers.

103. No good purpose could be served by our attempting to lay down a hard and fast scheme for the construction of tramways. The selection of proper routes would require minute examination. We propose briefly to describe and criticise the important proposals reported upon by the Advisory Board of Engineers, who have indicated the various directions in which the construction and operation of tramways would be beneficial and useful, and the street improvements in connection therewith, which they recommend. We do this because they afford useful illustrations of the advantages that may be derived, and the evils that should be avoided, in improvements of this character.

In addition to the proposal already noticed, for two Main Avenues from west to east, and from north to south, with tramways on the surface, the Advisory Board of Engineers further propose that tramways should be laid on the following routes, after making the necessary street improvements:—

Tramways on proposed main avenues.

Ib., Route No. 1, p. 80.

Across Hammersmith Bridge.—A surface tramway to connect the authorised tramways of the London County Council, at the north of the bridge, with those of the London United Tramways Company, at the south of the bridge.

Other tramway routes.

Ib., Route No. 2, p. 80.

Hammersmith to Knightsbridge.—A surface tramway, starting by a junction with the London United Tramways and the London County Council authorised tramway in Hammersmith Broadway, and passing along Hammersmith Road, Kensington Road and High Road, Knightsbridge, and terminating, by a junction, with Routes Nos. 3 and 4, in Knightsbridge, at the northern end of Sloane Street.

Ib., Route No. 3, p. 80.

Knightsbridge to Aldgate.—A subway continuation of Routes Nos. 2 and 4, starting in Knightsbridge, at the northern end of Sloane Street, and passing under Hyde Park Corner, Piccadilly, Coventry Street, King William Street, Strand, Fleet Street, Ludgate Hill, Cheapside, Cornhill, Leadenhall Street, to Aldgate, and terminating, by a junction, with the London County Council (North Metropolitan Section) Tramways, in Aldgate High Street.

- Fulham and Brompton Roads.**—A surface tramway, starting by a junction with the London County Council authorised tramway, at the junction of Fulham Palace Road and High Street, Fulham, and passing along Fulham Road and Brompton Road, and terminating, by a junction with Routes Nos. 2 and 3, in Knightsbridge, at the northern end of Sloane Street. Ib., Route No. 4, p. 81.
- Grosvenor Place and Hyde Park.**—A surface tramway, starting by a junction with the London County Council Tramways at their terminus in Vauxhall Bridge Road, and passing along Victoria Street to Grosvenor Gardens, and thence, in subway, under Grosvenor Gardens, Grosvenor Place and the eastern side of Hyde Park, and terminating, by a junction with Routes Nos. 6 and 9, at the southern end of the Edgware Road. Ib., Route No. 5, p. 81.
- Edgware Road and Maida Vale.**—A surface tramway, starting by a junction with Route No. 5, near the Marble Arch and passing along Edgware Road, Maida Vale and High Road, Kilburn, and terminating, by a junction with the existing light railways of the Middlesex County Council, at Cricklewood. Ib., Route No. 6, p. 81.
- Harrow Road.**—A surface tramway, starting by a junction with the Harrow Road and Paddington Tramways at their eastern terminus in Harrow Road, and passing along Harrow Road, Westbourne Terrace and Bishop's Road, and terminating, by junctions with Routes Nos. 6 and 22, in the Edgware Road. Ib., Route No. 7, p. 81.
- Cambridge Avenue.**—A surface tramway, starting by a junction with the Harrow Road and Paddington Tramways at their terminus in Cambridge Road, and passing along Cambridge Avenue and terminating by a junction with Route No. 6, in the Edgware Road. Ib., Route No. 8, p. 81.
- Uxbridge and Bayswater Roads.**—A surface tramway, starting by a junction with the London United Tramways at their terminus at Shepherd's Bush, and passing along Holland Park Avenue, High Street, Notting Hill Gate and Bayswater Road, and terminating, by junctions with Route No. 5, at the Marble Arch. Ib., Route No. 9, p. 81.
- Westminster Bridge and Victoria Embankment.**—A surface tramway, starting by junctions with the London County Council Tramways in Westminster Bridge Road and Stangate at their termini, and passing over Westminster Bridge and along the Victoria Embankment, and terminating, by junctions, with the London County Council authorised subway tramway at Waterloo Bridge, and Route No. 11. Ib., Route No. 10, p. 81.
- Waterloo Bridge and Blackfriars Bridge.**—A surface tramway, starting by a junction with Route No. 10 at Waterloo Bridge, and passing along the Victoria Embankment, and terminating, by junctions with Routes No. 12 and 13, at Blackfriars Bridge. Ib., Route No. 11, p. 82.
- Queen Victoria Street and Southwark Bridge.**—A surface tramway, starting by a junction with Route No. 11 at Blackfriars Bridge northern approach, and passing along Queen Victoria Street, Cannon Street, Queen Street and over Southwark Bridge, and terminating, by a junction with the London County Council Tramways, at their terminus, in Southwark Bridge Road. Ib., Route No. 12, p. 82.
- New Bridge Street and Farringdon Street.**—A surface tramway, starting by a junction with the London County Council Tramways at their terminus in the Blackfriars Bridge Road, passing over the suggested viaduct from the centre of Blackfriars Bridge to Farringdon Street, then along Farringdon Road, and terminating, by a junction with the London County Council (North Metropolitan Section) Tramways, in Theobald's Road. Ib., Route No. 13, p. 82.
- Holborn and Charterhouse Street.**—A surface tramway, starting by a junction with the London County Council (North Metropolitan Section) Tramways at their terminus at the Southern end of Gray's Inn Road, passing along Holborn and Charterhouse Street, and terminating, by a junction with Route No. 13, in Farringdon Road. Ib., Route No. 14, p. 82.
- York Road, Stamford Street and Southwark Street.**—A surface tramway, starting by a junction with the London County Council Tramways in Westminster Bridge Road, and passing along York Road, Stamford Street and Southwark Street, terminating, by a junction Ib., Route No. 15, p. 83.

with the London County Council Tramways, in Southwark Bridge Road, also with a branch down Waterloo Road to join up that terminus.

- Ib., Route No. 16, p. 83. Tower Subway.—A subway tramway, starting by a junction with the London County Council (North Metropolitan Section) Tramways at their terminus at Leman Street, and passing under the River Thames at a point East of St. Katherine's Docks, and terminating, by a junction with the London County Council Tramways, at the southern approach to the Tower Bridge.
- Ib., Route No. 17, p. 83. Tottenham Court Road and Whitehall.—A surface tramway, starting by a junction with the London County Council (North Metropolitan Section) Tramways at their terminus at the southern end of the Hampstead Road, passing along Tottenham Court Road, Charing Cross Road, Trafalgar Square (east side), Charing Cross, Whitehall, Parliament Street and Bridge Street, and terminating, by a junction with Route No. 10, at the western end of Westminster Bridge.
- Ib., Route No. 18, p. 83. Moorgate, Liverpool Street and Norton Folgate.—A surface tramway, starting by a junction with the London County Council (North Metropolitan Section) Tramways at their terminus at South Place, passing along Finsbury Pavement, Finsbury Circus, Liverpool Street and Bishopsgate Street Without, and terminating, by a junction with the London County Council (North Metropolitan Section) Tramways, at their terminus in Norton Folgate.
- Ib., Route No. 19, p. 83. Aldersgate Street to Post Office.—A subway tramway, starting by a junction with the London County Council (North Metropolitan Section) Tramways at their terminus near Charterhouse Square, passing under Aldersgate Street and St. Martin's le Grand, and terminating near the General Post Office.
- Ib., Route No. 20, p. 83. King's Road—Chelsea, and Buckingham Palace Road.—A surface tramway, starting by a junction with the London County Council authorised tramway in High Street, Fulham, at the northern approach to Putney Bridge, and passing along New King's Road, King's Road—Chelsea, Sloane Square, Lower Sloane Street, Pimlico Road and Buckingham Palace Road, and terminating, by a junction with Route No. 5, at the western end of Victoria Street at Grosvenor Gardens.
- Ib., Route No. 21, p. 84. Victoria Street, Westminster.—A surface tramway, starting by a junction with Route No. 5 at the northern end of Vauxhall Bridge Road, and passing along Victoria Street, Broad Sanctuary and Parliament Square, and terminating, by a junction with Route No. 17, at Parliament Street.
- Ib., Route No. 22, p. 84. Marylebone and Euston Roads.—A surface tramway, starting by a junction with Route No. 7, at the Edgware Road, opposite the Harrow Road, and passing along the suggested new street and the Marylebone Road and Euston Road, and terminating, by a junction with the London County Council (North Metropolitan Section) Tramways in the Euston Road, at King's Cross Station.
- Ib., Route No. 23, p. 84. Finchley Road.—A surface tramway, starting by a junction with Route No. 22, at Upper Baker Street, and passing along Upper Baker Street, Park Road, Wellington Road and Finchley Road, and terminating, by a junction with the Middlesex County Council authorised light railways, at Childs Hill.

Infra, p. 54 hereof. These projects can best be understood by studying the Tramway Plan, upon which all the projects are shown.

104. The advantages of some of these proposals are obvious. If they were carried out, a tramway along the Euston and Marylebone Roads and the Edgware Road, would connect the existing eastern and western systems, passing quite close to five of the principal railway termini in London: north and south would be connected by two lines outside the City: four lines from the west would penetrate to the central area and thence be continued to the eastern districts: not least in

Effects of these proposals.

importance, tramways would cross the Thames on two existing bridges (Westminster and Blackfriars), which would be united by a line along the Thames Embankment. Thus urgently needed through communication would be afforded. In short, the three isolated systems, which we have described, would be linked together; the central area, hitherto destitute of tramways, would be partially opened out; and the Thames would no longer interrupt communication between north and south.

They involve a large extent of subways.

Cost of subways.

105. Some proposals, on which the Advisory Board of Engineers report, are undoubtedly open to criticism. They involve, in all, about seven miles (excluding the subways under the proposed Main Avenues) of tunnels or subways, chiefly under roads, through which tramways are to be constructed in continuation of the surface system. The cost of subways, under streets, will not be uniform. It must depend largely upon local and physical conditions; but a subway, made for a tramway, will be much the same as one made for a railway. Some put the cost as high as a million sterling¹ in specific localities, some as low as £300,000² per mile where more favourable conditions exist. At the lowest estimate of £300,000 a mile, it is obvious that, if subways were required for any considerable distance, tramways, so far from being remunerative, might prove a source of heavy loss. Where so much is needed in the way of improvements, one governing consideration, in selecting what should be taken in hand and what left over till a later date, must, of necessity, be finance. We do not say that subways ought, in no case, to be constructed. On the contrary, there are parts of London where the value of land is so great, notably in the City of London, that widening, for tramway purposes, is not to be thought of. In such places, the only course is to construct subways. But that is not so everywhere, and, for the most part, if the choice lies between subways and widening, we believe that it will be found nearly as cheap to widen the streets and lay tramways on the surface. In any case, it must be a question of relative cost, with the additional consideration that travelling on the surface is always preferable, and a wide street always an advantage.

Subway from Albert Gate to the City.

Applying this view to the projects, outlined by the Advisory Board of Engineers, we do not think that a case is made out in favour of a subway being constructed, at the cost of the municipality, from Albert Gate along Piccadilly to the City merely as a continuation of the surface tramway to Albert Gate: it would be about four miles long, and would be very costly. A "tube" railway is already under construction along a considerable portion of the same route,³ and the question of increased communication along this line is referred to in Chapter VII, paragraph 144, of our Report, which deals with railways.

Subways in the City.

106. Most of the other subways, suggested by the Advisory Board of Engineers, are within the City of London or immediately adjacent to it, on the eastern side. So much of this part of their scheme as contemplates a tunnel beneath the Thames, east of the Tower Bridge, to unite existing terminals in Lemn Street and Tower Bridge Road, however desirable, does not seem to us so pressing as to justify, at present, the great expense involved, when so many other improvements are urgently needed.

Position of City as regards tramways.

107. As to the proposals within the City of London, some involve subways, others are for surface tramways. The position of the City is peculiar: in no district of London is the congestion greater, or relief more urgently needed. The streets, in the more crowded parts of the City, are not wide enough to admit of surface tramways, having regard to the immense traffic passing over them, and widening is quite impracticable, because of the value of land. In these circumstances, relief can be afforded only by subways, which must be very costly. It is in these respects that the proposed new avenues offer so many advantages, inasmuch as they provide for railways in subways, as well as for surface lines of tramway. Within the boundaries of the City, where the traffic is less, there are streets which do admit of tramways. But

¹ Sir D. Fox, Q. 13998, Vol. II.

² Mr. Fitzmaurice, Appendix No. 9, p. 274. Mr. Bradley, Appendix No. 37, Statement B, p. 442.—Vol. III.

³ The Great Northern, Piccadilly and Brompton Railway.

Route No. 3, par. 103.

Tramway Plan, p. 54 hereof; and Vol. VII, Report of Advisory Board, Route No. 16, p. 83.

1b., P. 80, Route No. 3; P. 82, Route No. 12; P. 82, Route No. 13; P. 82, Route No. 14; P. 83, Route No. 15; P. 83, Route No. 16.

the City Corporation, partly, no doubt, from apprehension that, if once surface tramways were admitted, they might be extended to places where, we agree, they are impossible, have uniformly opposed the laying of any surface tramways within their precincts, though they do not object to subways. Our difficulty is that, if they adhere to this view, and no surface tramways are allowed in any part of the City, the cost of subways would, on so great a scale as to satisfy existing requirements, be prohibitive. Either they would not be constructed, and the evil left without remedy, or other parts of London would have to suffer. We think that surface tramways should be laid down in the City of London, where they can be shown to be reasonably practicable, and that subways should be made where surface tramways are not practicable.

Vol. VII,
Report of
Advisory
Board,
Route No.
13, p. 82.

108. One route affecting the City of London, recommended by the Advisory Board of Engineers, requires special notice:—Route No. 13 upon the Tramway Plan—which provides that a line of tramway should be laid upon Blackfriars Bridge and thence northward along a raised viaduct to Farringdon Street, and so join the North Metropolitan Section of the London County Council Tramways at Theobald's Road. The structural works necessary for this project have already been adverted to among the street improvements proposed by the Advisory Board of Engineers. If those improvements are effected, we think a tramway for that route would be practicable and would be of much advantage, because it would link together the northern and southern tramway systems. Throughout its course, it would be a short distance within the City boundary, but it would be very conveniently situated. A proposal of a somewhat similar nature was also put forward by Sir Henry Knight,¹ who was formerly Lord Mayor and Chairman of the Police Committee and of the General Purposes Committee of Aldermen of the City of London.

*Blackfriars
Bridge.*

Ib., p. 81,
Route
No. 5.

109. A subway is proposed by the Advisory Board of Engineers:—Route No. 5, starting from Victoria Station and running beneath Grosvenor Place and Hyde Park at its eastern edge, to Marble Arch. At both extremities, it would unite other tramways existing and proposed, and form a most important link of communication between north and south. The whole length of subway contemplated is a little over $1\frac{1}{2}$ miles, of which nearly one $\frac{3}{4}$ mile would run beneath the roadway in Hyde Park, where it could be constructed more cheaply than under streets or buildings. We think this route, which would relieve the congestion at the crossings at Hyde Park Corner and Marble Arch, is so important that it should be taken in hand with as little delay as is possible. If public opinion would tolerate tramways on the surface, along the eastern edge of Hyde Park and thence down Grosvenor Place, the cost would not, it is believed, exceed £80,000 in all, but the congestion at the crossings would not be relieved.

*Subway from
Victoria Station
to the Marble
Arch.*

Street Plan
p. 40, and
Tramway
Plan p. 54
hereof, and
Vol. VII,
Report of
Advisory
Board,
Routes
Nos. 22, 9,
2, 4 and 20,
pp. 84, 81,
80, 81 and
83.

110. The other tramways, proposed by the Advisory Board of Engineers, are on the surface, and most of them are important, as we have already seen. The proposals include the laying of tramways along five of the routes upon which street improvements have been suggested:—the Euston and Marylebone Roads, Bayswater Road, Hammersmith Road, Fulham Road and King's Road—Chelsea. We recognise that on these, as well as on other routes designed for tramways, some street improvements will, at places, be required, and that extensive improvements, in the way of widening streets, would be an advantage upon all the routes. In King's Road, particularly, considerable street improvements will be necessary; but, if the construction of tramways were delayed until the full width recommended, of 100, or even 80 feet, could be everywhere secured, the introduction of tramways might be postponed indefinitely, owing to the great cost which such improvements would involve. We believe that most of these routes could be laid out for tramways with only a moderate outlay for widening in particular places, and we are so convinced of the urgent necessity for tramway accommodation in London, that we recommend that the work on the five routes in question should be taken in hand as soon as possible. It is unnecessary to indicate other routes with regard to which the same course might be

*Five specified
main routes.*

Ib., p. 45.

¹ Sir H. Knight, Q. 14504, Vol. II; and Plate LIII, Vol. VI.

followed; the illustrations already dealt with are sufficient. If these works are executed, and the travelling public realise the advantages which we anticipate, further extensions will follow as a matter of course.

Recommendations : (a) Tramways.

Conclusions summarised.

111. We will now summarise the conclusions at which we have arrived. The tramway mileage is quite insufficient, and the absence of through communication between the different systems, within the Administrative County of London, and between those inside the latter, and those outside in "Extra London" causes great inconvenience and diminished efficiency. Tramways are very useful for short distance traffic in London, and, on judiciously chosen routes, would be remunerative if run on the surface. Though many of the streets are of insufficient width, the defect is not so universal as to preclude a large extension of the tramway system in the Administrative County of London without a great expenditure on street widening.

We recommend :—

A large extension of tramways in London and the suburbs; that immediate attention be given to providing through communication between the different tramway systems within the Administrative County of London; across the Thames by the Westminster and Blackfriars Bridges; and that provision be made for through running inside and outside the Administrative County of London.

Through running.

112. Any great increase of tramways, such as we anticipate, would lead to the necessity of organization for the purpose of securing the harmonious working of the separately-owned systems. Through communication, that is, the running of through cars over tramway systems, separately owned, without rebooking or trans-shipment of passengers, is of great importance in the interests of cheap, expeditious and convenient locomotion, and the refusal of reasonable facilities for that purpose should not be allowed. However large the tramway systems under single management may be, there will be places where difficulties will arise in connection with through communication, and, in such cases, stringent regulations should be enforced for facilitating traffic. We rely on the action of the proposed Traffic Board to protect the interests of the public in all such cases, and think the Board should insist, wherever practicable and desirable in the public interests, on through communication without the passengers being required to change cars, such through communication being enforced, if necessary, by the grant of running powers, subject, of course, as will be explained hereafter, to approval by Parliament. Arrangements of this nature will be found necessary at the borders of the Administrative County of London, and difficulties will, no doubt, be experienced at other places in connection with the purchase of particular tramways, but we see no reason to doubt that all such matters can be satisfactorily settled, as they arise, by the proposed Traffic Board, and we consider it unnecessary to notice, in detail, matters of this nature, which have been specially brought before us by those concerned. Where, however, through running of cars is impracticable, through bookings and an interchange of passengers, at convenient times and places, should be secured.

Unity of management.

We have been told by witnesses that from this point of view the various tramway systems within "Greater London" ought to be worked by one and the same authority, and that for this and other reasons it is inexpedient for the London County Council to operate their own tramways.

Municipal ownership and operation.

So far as the question involves considerations of municipal trading, we do not think it is within our province to express an opinion. We think it reasonable that some profit should be derived from the tramways for the benefit of the municipality,¹ but it does not follow that the best way of securing the largest profit will be that the municipality, even if it finds the money for construction, should undertake the task of operating. In other countries, it is not unusual for municipalities to construct, purchase or otherwise acquire the tramways, but in such cases the actual working is generally left to operating companies, with provision for proper rates and general control.

¹ Sir. J. C. Robinson, Qq. 24949 *et seq.*, Vol. III.

It is claimed that such methods yield better financial results to municipalities, and avoid difficulties which might arise from municipal authorities carrying on a business of this kind on a large scale. Abroad, the work of construction is also often facilitated by the same company, that is afterwards to operate, also undertaking, the building of the line, by contract with the municipal authorities, who are thereby saved from the risks and disadvantages attendant upon the making, as well as the working, of a line by a municipality.

If the tramways are operated by the municipalities concerned, we think that they should be worked on sound financial principles, with ample provision for depreciation and repayment of capital or discharge of debt. It also appears to us that any profit from tramways received by a municipality should, preferentially, be applied to necessary tramway developments, and to street improvements. In this way, as time goes on, a considerable annual sum might be secured to meet expenditure, which otherwise would fall on the rates, and this arrangement would greatly facilitate the undertaking of works urgently required in London.

The matter is one of such importance that, having regard to the conflicting views that have been laid before us, we strongly recommend that the whole question of the expediency of the working of large tramway systems by municipalities be specially investigated.

(b) Procedure for Obtaining Authority to Construct Tramways and Question of the "Veto."

113. It remains to be considered whether any change is necessary *Changes in law.* in the law. An important controversy has been raised before us in regard to the use and abuse of a power of "veto" upon the construction of tramways, which is possessed by the London County Council, the Corporations of the Cities of London and Westminster, and by every Metropolitan Borough Council within the Administrative County of London, and also by the local authorities and road authorities in the adjoining counties. It will be better appreciated after reference to the laws now regulating the construction of tramways.

There are four methods by which the construction may be authorised:—

(1.) Under the Railway Construction Facilities Act, 1864.—Under this Act, the Board of Trade may give a certificate authorising the construction of a railway (which might include a tramway or tramroad) where all the landowners, and others beneficially interested, are consenting. Such certificate must be laid before Parliament, and will be void if either House disapproves of it within six weeks. This method, however, has never been used, and cannot be conveniently used for London: it may accordingly be disregarded. *Existing procedure for obtaining sanction to construct tramways. Railway Construction Facilities Act, 1864.*

(2.) Under the Tramways Act, 1870.—Under this Act, the Board of Trade can, by Provisional Order, which has to be confirmed by Parliament, authorise a local authority, with the consent of any separate road authority, and can authorise any company or person, with the consent of the local authority and road authority, to construct a tramway. Where two-thirds of a scheme is consented to by the local and road authorities concerned, the Board of Trade may dispense with the consent of any other objecting authority. One-third of the frontagers, to a distance of 30 feet at any given place, have power to "veto" the construction of a line opposite their premises, where the nearest rail would, for a distance of 30 feet, be within 9 feet 6 inches of the edge of the footpath. There is no authority to give compulsory power to acquire land. Under this Act the local authority is enabled to buy the undertaking, at its then value as a structure, at the expiration of 21 years from the passing of the Act confirming the Provisional Order. The period for purchase may be varied by consent. *Tramways Act, 1870.*

(3.) The Light Railways Act, 1896.—Under this Act, the council of any county, borough or district, or any private promoters may apply to the Light Railway Commissioners for power to construct a light railway, which is often, in fact, indistinguishable from a tramway. Any of those local authorities may be authorised to construct and work a line, or, *Light Railways Act, 1896.*

subject to supervision by the Board of Trade, to advance money by loan, or by taking shares in a company's undertaking. The Treasury are empowered to make advances to light railway undertakings. The consent of the local and road authorities is not required: there is no frontagers' veto. There is provision for compulsory power to acquire land, and the schemes do not go before Parliament for sanction, but must be confirmed by the Board of Trade. The Board of Trade must not confirm any Order of the Light Railway Commissioners, if they think the proposals are such as ought to be submitted to Parliament, by reason of the magnitude of the proposed undertaking, or its effect on the undertaking of any railway company, or for any special reason. It may be observed that the Light Railway Commissioners, in practice, hold that they ought not to authorise a light railway, unless it connects the area of one local authority with another. This Act also may be disregarded, in so far as the Administrative County of London is concerned, because it would not be applicable to such undertakings as tramways in London.

Private Bill.

(4.) There remains the ordinary course of applying by Private Bill to Parliament. In the case of Private Bills, however, the Standing Orders¹ of Parliament are to the same effect as the provisions of the Tramways Act, 1870, as regards the consents of local and road authorities. The consents must be proved, though, if two-thirds of the scheme is consented to, the consents for the remainder may be dispensed with. We do not desire to dwell at any length, in this place, on the anomalies and confusion arising from the existence of several separate and distinct methods of procedure, not subject to the same conditions, for obtaining sanction to the construction of tramways, but we cannot refrain from observing that, in our opinion, simplification and amendment of the procedure for obtaining such powers are urgently required.

The "veto."

The only two methods practically available for procuring legislative authority to build tramways in London are subject to "veto" by the local and road authorities.

Accordingly the London County Council, when promoting a tramway scheme, must get the consent of any Metropolitan Borough Council which may be concerned as road authority, or, in case of a through route, of two-thirds of the road authorities. On the other hand, the London County Council can use the same check as the local authority in order to defeat any other promoters who seek to construct tramways within their area, either under the Tramway Act, 1870, or by method of Private Bill.

¹ Standing Orders of the House of Lords, relative to Private Bills:—

*Consents in case
of Tramway Bills.*

22. "In cases of Bills to authorise the laying down of a tramway, the promoters shall, on or before the eighteenth day of January, obtain the consent of the local authority of the district or districts through which it is proposed to construct such tramway, and where in any district there is a road authority distinct from the local authority, the consent of such road authority shall also be necessary in any case where power is sought to break up any road subject to the jurisdiction of such road authority. For the purposes of this Order in England and Scotland the local and road authorities shall be the local and road authorities for the purposes of the Tramways Act, 1870, except that in the case of a rural district in England the rural district council shall be deemed to be the local authority, and in Ireland the local and road authorities shall be the district councils and the county councils respectively: Provided that where it is proposed to lay down a continuous line of tramway in two or more districts, and any local or road authority having jurisdiction in any such districts does not consent thereto, the consents of the local and road authority, or the local and road authorities having jurisdiction over two-thirds in length of the streets and roads along which such line of tramway is proposed to be laid, shall be deemed to be sufficient."

*Consents in case
of Tramways Bill.*

Standing Orders of the House of Commons, relative to Private Bills:—

22. "In cases of Bills to authorise the laying down of a Tramway, the promoters shall obtain the consent of the local authority of the district or districts through which it is proposed to construct such Tramway, and where in any district there is a road authority distinct from the local authority, the consent of such road authority shall also be necessary in any case where power is sought to break up any road, subject to the jurisdiction of such road authority. For the purposes of this Order, in *England and Scotland*, the local and road authorities shall be the local and road authorities for the purposes of "The Tramways Act, 1870," except that in the case of a rural district in *England* the rural district council shall be deemed to be the local authority, and in *Ireland* the local and road authorities shall be the district councils and the county councils respectively. Provided that where it is proposed to lay down a continuous line of Tramway in two or more districts, and any local or road authority having jurisdiction in any such districts does not consent thereto, the consents of the local and road authority, or the local and road authorities having jurisdiction over Two-thirds of the length of such proposed line of Tramway shall be deemed to be sufficient."

114. When we come to deal with the second question referred to us by Your Majesty :—the proposal to establish an authority or tribunal for dealing with traffic questions, we shall have occasion to make recommendations in regard to the system of procedure for authorising tramways or railways in London; at present, we point out that an artificial check is imposed upon the construction of tramways in London. Within London, the local authorities and the road authorities, for the purposes of the Tramways Act, 1870, and Standing Order 22, are not identical. Thus there is a double “veto,” which each can employ against the other, and both can employ against third persons. Both the London County Council and the Metropolitan Borough Councils have used their “veto” frequently. The Corporation of the City of London also possesses a “veto” and has invariably used it against all comers.

Experience shows the effect of the “veto” to be mischievous.

In the same way, outside of the Administrative County of London, the road authorities and the local authorities and the frontagers, in certain cases, under the Tramways Act 1870, have a right of “veto.”

The evidence laid before us as to what has been experienced in practice leads to the conclusion that the “veto” has been used in many cases without due regard to the interests of the general public.¹

Two classes of witnesses who have given evidence on the point are affected, not unnaturally, by their interests in the matter. The promoters of tramways are opposed to the maintenance of the “veto,” and they have given instances in which it has been exercised in an unreasonable manner and with mischievous results.

Evidence of tramway promoters.

On the other hand, representatives of the bodies that possess the “veto” are generally in favour of maintaining it; they assert, no doubt in good faith, and in many cases with accuracy, that they have never exercised it unreasonably, nor otherwise than with reference to the general advantage. But they are not absolutely unanimous as to the propriety of maintaining the “veto”: for example, Mr. Charles E. Baker, who appeared before us as representative of the greater number of the Urban District Councils in the neighbourhood of London, was of opinion² that the “veto” should be abolished, so far as London and its vicinity are concerned. The representatives of the Metropolitan Borough Council of Battersea³ and the Metropolitan Borough Council of Stepney⁴ were also of opinion that the “veto” might be done away with, if there was a Traffic Board which would deal with such questions. Most of the Metropolitan Borough Councils appear to think that, if they had not the right of “veto,” they might be put to considerable expense in opposing in Parliament schemes that affected them injuriously,⁵ or in connection with which it was proposed to levy from the borough an undue proportion of the cost of street widening, but that the existence of a permanent Traffic Board, with special knowledge, would be a safeguard in these respects.

The authorities who possess the “veto” are generally opposed to its abolition, but are not quite unanimous.

The strongest opposition to the abolition of the “veto” comes from the Corporation of the City of London and its officers.⁶

Opinion of the Corporation of the City of London.

The London County Council would like to see the right of “veto” abolished, in the case of the Metropolitan Borough Councils and the Corporation of the City, but wishes to retain its own right of “veto” against the private promoter,⁷ and objects to submitting its tramway schemes to a Traffic Board, preferring that they should go direct to Parliament.⁷

Opinion of the London County Council.

On the other hand, independent witnesses, whose experience gives great weight to their testimony, are in favour of the abolition of the “veto.” Mr. J. W. Lowther, M.P., at the time Chairman of Committees and now Speaker of the House of Commons, expressed a strong opinion⁸ that the power of

Evidence of impartial witnesses.

Opinion of the Chairman of Committees of the House of Commons.

¹ Mr. Morse, Q. 3470, Vol. II. Mr. Sellon, Q. 13245, Vol. II; and Appendix No. 38, p. 453, Vol. III. Sir Ralph Littler, Q. 15885. Rt. Hon. J. W. Lowther, M.P., Q. 17444.—Vol. II. Sir J. C. Robinson, Q. 24843, Vol. II; and Appendix No. 82, Statement A, p. 827, Vol. III.

² Mr. Baker, Q. 16394. Vol. II.

³ Mr. Brown, Qq. 9007 *et seq.*, Vol. II.

⁴ Mr. J. H. Robinson, Q. 9518, Vol. II.

⁵ Mr. F. S. Robinson, Q. 10063, Vol. II.

⁶ Mr. Morton, Qq. 1875 *et seq.*, Vol. II.

⁷ Mr. Dickinson, Qq. 2209 *et seq.*, 2594, 2602 *et seq.*, Vol. II; and Appendix No. 3, p. 41, Vol. III.

⁸ Rt. Hon. J. W. Lowther, M.P., Q. 17439, Vol. II.

"vetoing" tramways had worked a great deal of mischief; that the Standing Order had been most improperly used for the purpose of extorting all sorts of terms and conditions from tramway companies, and had subjected them to liabilities and disabilities which were never contemplated by Parliament.

Opinion of the Counsel to the Chairman of Committees of the House of Lords.

Views of the late Lord Morley, formerly Chairman of Committees of the House of Lords.

Opinion of Sir Ralph Littler, K.C.

Mr. Albert Gray, K.C., Counsel to the Chairman of Committees of the House of Lords, expressed the same opinion,¹ and said that the "veto" was extremely detrimental to tramway enterprise, and had for the municipal bodies themselves.

We were, unfortunately, unable to obtain the evidence of the late Lord Morley, Chairman of Committees of the House of Lords, but we observe that, both on 2nd August, 1900, and 11th July, 1901, he expressed, in the House of Lords, opinions in favour of the abolition of the present right of "veto."

Sir Ralph Littler, K.C., the Leader of the Parliamentary Bar, expressed a similar opinion² as regards the exercise of the right of "veto" by small local bodies, and added that, if the "veto" was placed in the hands of large bodies like county councils, much harm would not be done.³

Parliamentary Debates (Author's Edition), [Fourth Series], 1900, Vol. LXXXV (Lords), 406.

Ib., 1901, Vol. XCVII, (Lords),

Effect of the "veto."

115. There is no doubt that tramway development has been seriously checked by the operation of these "vetoes," and, although it is not suggested that any unworthy use has been made of them in London, it is clear that the "veto" is sometimes exercised without due regard to the importance of establishing through tramway communication.

"Veto" should be abolished.

Preferential right to construct tramways to be given to the county councils, and the Corporation of the City of London.

We have come to the conclusion that the best course is to abolish the "veto" in all cases, but to provide that, in "Greater London," the county councils, and the Corporation of the City of London shall have a preferential right to construct any tramways, within their districts, if they are prepared to do so. We consider it unreasonable that one portion of a district should be in a position to put a stop to the construction of a general system of tramways required for the public benefit, without even allowing the case to be presented for the consideration of Parliament. In so far as the "veto" fetters the discretion of Parliament, a remedy can be applied by modifying Standing Orders No. 22.

It appears to us that, instead of a "veto" it would be sufficient that local and road authorities should have a *locus standi* to appear before the proposed Traffic Board and Parliament⁴, in opposition to any tramway scheme within their districts, by whomsoever such tramway scheme might be promoted.

Frontagers' "veto."

116. In the same way it may be quite right, that the frontagers, who have at present a "veto" under the Tramways Act, 1870, should be entitled to oppose the construction of tramways. There can, however, be no valid ground for allowing them to prevent proposals from being even considered. We accordingly recommend that the frontagers' "veto" be abolished, and that those who now possess it should have a *locus standi* upon any tramway scheme affecting their property.

¹ Mr. Albert Gray, K.C., Qq. 16671 *et seq.*, Vol. II.

² Sir Ralph Littler, Q. 15883, Vol. II.

³ Sir Ralph Littler, Q. 15881, Vol. II.

⁴ Rt. Hon. J. W. Lowther, M.P., Q. 17440, Vol. II.

The map displays the Thompson Plateau region, characterized by its rugged topography and numerous peaks. Key features include the Thompson Plateau itself, the Ranger area, and the Crested Butte National Monument. The map is overlaid with a grid system, likely for reference purposes. Various geological formations and elevations are indicated throughout the landscape.

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 84

CHAPTER VII.

RECOMMENDATIONS AS TO RAILWAYS.

Characteristics and Functions of Urban Railways.

117. In any consideration of the railway question, three features force themselves into immediate prominence. The first is the large capital expenditure necessary for the construction of railways: this differentiates railways from any other form of locomotion. The second is that a railway, once constructed, cannot practically be altered in its location; the occupation of any location must be regarded as a permanent assignment to the railway, and, both for physical and financial reasons, any substantial interference with it in future is impossible. Hence it is essential that the railway system, as a whole, should be supervised, in its growth and development, on definite, consistent and carefully-framed principles, directed towards the achievement of a clearly conceived result. The third leading characteristic of railways in London is that the public are, and must be, mainly, if not exclusively, dependent upon them for conveyance to and from residential districts in and beyond the outskirts of London. Within urban limits, tramways and omnibuses, and, for a comparatively small but important class of the community, cabs are alternative modes of conveyance, and the deficiencies of one can be supplemented by the services of another. But, for the purpose of travelling from the centre of London to the more remote districts, railways are essential, as no other mode of transport gives sufficient speed. It is desirable, therefore, that railway facilities should be placed within the reach of as many districts as possible, so as to afford a wide range of choice to persons desirous of living out of London.

Heavy cost of urban railways.

Location cannot be altered after construction.

The requirements of the morning and evening traffic can only be met by railways.

118. It is necessary at the outset to form a clear conception of the functions of railways as part of the general scheme for locomotion and transport in London. For this purpose, we must consider separately the requirements of (1) passengers and (2) goods traffic; and passenger traffic, for present purposes may be conveniently classified into (1) urban, (2) suburban and (3) long distance—including all traffic beyond suburban limits.

Functions of London railways.

As regards urban and suburban traffic, it is most important to consider separately the requirements of each. Their needs are wholly different in character, and many of the mistakes of the past have been due to not keeping this distinction in mind with sufficient prominence. Whether the same tracks can be used within the central area for trains serving both classes of traffic, or to what extent they can be so used, are questions of practical railway working, but it is obvious that the use of a line for one of these kinds of traffic may destroy or impair its utility for the other. The considerations affecting location, accommodation and working are radically different, and, to some extent, conflicting; and the absence of comprehensive design in the railway system in London is nowhere more apparent than in the confusion which has arisen from not distinguishing, with sufficient clearness, between the requirements of the different classes of traffic. Railways, intended for urban traffic, have been used, and partly designed, for suburban traffic to an extent, and under conditions, which have adversely affected their utility for both purposes.

Separate requirements of urban and suburban traffic.

119. It must be kept in mind that urban movement must always be mainly along the streets and must depend, for its principal provision, upon street conveyances. The construction of underground railways has not taken off the streets a sufficient number of people to affect substantially the demand for street conveyances, or to diminish the street congestion. The exact length of journey for which people generally will take a railway, to which they have to walk for any distance, or to descend from street level, cannot of course be determined. Sir Henry Oakley, in his evidence, put it

Urban traffic must be mainly along the streets.

But railways are necessary for long distance urban traffic.

at anything over one mile.¹ It would, in each case, be fixed by a combination of motives based upon considerations of time, cost, weather and physical effort. But, whatever may be the precise distance differentiation in the case of underground railways and surface conveyances, there can be no practical doubt that urban railways are no complete substitute for wide streets and street tramways. It is equally certain, however, that railways are an absolute necessity for urban movement in so large a city as London, because of the vast number of people constantly moving about within the urban area for distances for which a quicker transit is required than can be obtained either by surface tramway or omnibus. But, to meet the requirements of such passengers, there must be no delay in getting a train at stations. Even a few minutes' delay seriously detracts from the value of the railway as an alternative, in urban movement, to street conveyance. It is consequently essential that the service, on an urban railway, must be so frequent as to be practically continuous.

The importance of the considerations mentioned above lies in the conclusion to be drawn, that it is of vital importance not to attempt to use urban railways in any way, or for any purposes, which may prevent the running on them of train services of maximum frequency.

Requirements of suburban traffic.

120. Turning now to suburban traffic the principal needs of that class of traffic are railways in many directions, so that every district, suitable for suburban residence, may have railway facilities, quick trains, full service at "rush hours"—which may be cut down at other times of the day, and cheap fares, and, where possible, tramway facilities to and from the suburban railway stations.

Difficulty experienced in carrying urban and suburban traffic on the same lines.

The location of the termini in London for suburban trains, where terminal stations are a necessity, is a much more difficult matter than in the case of trunk line termini, for, in fixing the terminal points to which suburban trains should run, it is necessary to consider, not only the parts of the central area to which experience shows that passengers wish to go, and the means of reaching those parts, but also the necessities of railway working. What should be aimed at, is the provision of as full means as possible for the urban distribution of suburban passengers to their points of destination, taking care always not to use the urban railways in any way which would prejudice the performance of their main function of supplying continuous services at close intervals for urban traffic.

Nature of Railway Accommodation Required for London.

121. The needs of London in the matter of railway accommodation, apart from any question as to whether, or to what extent, those needs have already been provided for, may be summarised as follows:—

Main trunk lines.

(1.) Main trunk railways connecting London with the entire railway system of the country, with adequate running and terminal accommodation, and sufficient services for the convenient and speedy conveyance of long distance passengers, and for the carriage of merchandise traffic;

Suburban railways.

(2.) Railways to every suburban district in the neighbourhood of London suitable for residence for all classes of the population, especially those engaged in work in London, with full running accommodation to enable trains to be run during "rush hours" with sufficient frequency to provide for the conveyance of suburban passengers without overcrowding, and with convenient connections with all urban railways;

Urban railways.

(3.) Railways in, through, across and around the central area of London, to provide, not only for urban movement at higher speeds, and for longer distances than those which can be conveniently provided for by street tramways and omnibuses, but also for the distribution of suburban passengers to the fullest practicable extent.

Long distance traffic.

122. The requirements of long distance traffic, although highly important, do not, to any great extent, fall within the scope of the questions with which the Commission are mainly concerned: they affect our inquiry chiefly from the point of view of the location and adequacy of the main terminal stations;

¹ Sir Henry Oakley, Q. 18674, Vol. II.

the sufficiency of the street accommodation adjoining, and means of distribution of passengers arriving at, those terminal stations ; and the convenience of the train services connecting the termini, so as to enable long distance passengers to pass from one terminus to another without using street conveyances.

The main terminal stations have all been located many years ago, and it is improbable that, in the future, there will be much change in their positions. These positions are, on the whole, fairly convenient for the purposes concerned, and we have no recommendations to make regarding accommodation or facilities for main line long distance traffic, except so far as long distance passengers, on arrival at the terminal stations, become urban passengers, for whom adequate provision must be made.

123. As regards merchandise traffic, we do not intend to make any *Goods traffic* recommendations.

From information which the Commission has received, it appears that goods for exchange between the different railway systems are carried between the various railway yards, not by carts, but by railway, and, to a large extent, at night. Goods collected and delivered in London must, of course, pass through the streets, but we have no reason to think that the streets are used unnecessarily for the conveyance of goods from one railway station to another, or that the railway connections for goods traffic are seriously defective or inadequate. We do not propose therefore to make any attempt in this Report to deal with questions relating to railway accommodation or facilities for goods traffic.

There is, however, one matter connected with goods traffic to which we desire to call attention, and which has an important bearing on the congestion of streets in London, and the main roads leading into the suburbs. Mr. Gooday, the General Manager of the Great Eastern Railway, stated in his evidence¹ that the shop goods, or, in other words, the miscellaneous goods traffic for the supply of local needs, are not, to any substantial extent, carried by railway to suburban districts within a radius of about 20 miles from London: such traffic is carried by carriers' carts at rates and within journey times with which the railway companies cannot compete. Mr. Gooday gave¹ the quantity of miscellaneous goods traffic carried by railway to Walthamstow as only 24 lbs. per head per annum of the population, and to Edmonton 12 lbs., as compared with 1,603 lbs. per head per annum to Chelmsford, a distance of about 30 miles from London.

Mode of distribution of miscellaneous goods in the vicinity of London.

This indicates that the miscellaneous goods traffic to suburban districts, of which the volume, both in bulk and quantity, must be very large, carried and distributed by carts and vans, is one considerable source of the heavy traffic carted through the streets of London. If, owing to the high cost of handling, and the time necessarily taken in conveyance and delivery of goods traffic by railway, the railway companies are permanently unable to carry that class of traffic at rates, and in times, which can compete with road carriage, it is very desirable that steps should be taken, either by the railway companies or by others, to organise improved systems of road carriage, so that the number of carts and vans passing through the streets may be reduced as much as possible.

The Railway System of London As It Now Exists.

124. It is needful for the sake of clearness that, at this stage of our Report, we should give a brief sketch of what the railway system of London is: the manner in which the system has grown up has been described in paragraphs 33 to 55 of this Report.

The railways which serve any district, and more especially is this true of the railways serving a city of the vast area and population of London, must always be looked at as constituting an organic system, however imperfect and disjointed the system may seem, and however difficult it may be to discover the features of its anatomy, or the principles of its growth.

London railways should be considered as an organic system.

¹ Mr. Gooday, Qq. 18552 *et seq.*, Vol. II.

The growth, such as it was, must have been due to the application and operation of some principles, however loosely or inconsistently they may have been applied, and these should be our guide towards an understanding of the reasons, which prompted the creation, and shaped the form, of the system.

Main lines with termini in London.

125. Looking at the map of London, the first broad feature which is apparent is the existence of 10 main lines of approach, each belonging to a separate and independent railway company. Seven¹ of these main line systems are on the north of the Thames, two² having their termini on the east side of the central area within half a mile of each other, and conveniently situated for access to the City of London, and the remaining five having their termini almost in a straight line, extending from east to west for a distance of about two and a-half miles from King's Cross (G.N.R.) to Paddington (G.W.R.).

Railway Plan, p. 78.

The main lines serve the suburban traffic.

Three³ of the main lines have their principal termini on the south of the central area.

These main routes along which long distance traffic is brought to London also afford the principal avenues of railway approach to London for the trains from all suburban branches, except those connected with the North London and the Metropolitan and Metropolitan District Railways. Hence again, subject to the same exceptions, the vast suburban traffic, although also served by many subsidiary stations, is chiefly concentrated at the same terminal stations which serve the long distance passengers, who, though large in the aggregate, form only a small fraction of the total number of passengers dealt with at the main termini.

Vol. VII, Report of Advisory Board, p. 21.

List of main lines and of their London termini.

It may be convenient here to set out a tabular statement of the main lines of railway into London and their principal terminal stations :—

| Railway. | Main Termini in London. |
|--|-------------------------|
| Great Eastern - - - - - | Fenchurch Street. |
| London, Tilbury and Southend - - - - - | |
| Great Eastern - - - - - | Liverpool Street. |
| Great Northern - - - - - | King's Cross. |
| Midland - - - - - | St. Pancras. |
| London and North Western - - - - - | Euston. |
| Great Central - - - - - | Marylebone. |
| Great Western - - - - - | Paddington. |
| London, Brighton and South Coast - - - - - | London Bridge. |
| | Victoria. |
| | Victoria. |
| South Eastern and Chatham - - - - - | Charing Cross. |
| | Holborn Viaduct. |
| | Cannon Street. |
| London and South Western - - - - - | Waterloo. |

Central area from which railways were formerly excluded.

126. The next important feature of the railway system of London is the existence of a large oval area in the centre, about 4 miles long⁴

¹ G.W.R., G.C.R., L.N.W.R., M.R., G.N.R., G.E.R. and L.T. S.R.
² G.E.R. and L.T. S.R.
³ L.S.W.R., L.B. S.C.R. and S.E. C.R.
⁴ Paddington to Fenchurch Street.

and $1\frac{1}{2}$ miles broad¹, having no railways within its circumference, except the railway crossing from Farringdon Street to St. Paul's, and the deep-level "tube" railways recently built, or now under construction. This area, until lately devoid of railways, contains the most important part of London.

The cause of the absence of railways within that area is easily stated: they were debarred from entering by the deliberate policy of Parliament. The reasons for this will be found in paragraphs 36 to 43 of our Report, where we deal with the history of railway construction in London. At present we merely note the fact.

The annular area of about three miles in width, outside and round the central area above described, has been filled up with many lines made from time to time by separate railway companies, with various objects in view; some, as in the case of the North London Railway from Chalk Farm to Poplar, originally and mainly for the purposes of goods traffic, though now used largely for passenger traffic; some, as in the case of the Hammersmith line of the Great Western and Metropolitan Railway Companies, for local, or outer-urban, passenger traffic; some, as in the case of the branches of the Metropolitan District Railway converging at Earl's Court, and of the Metropolitan Railway converging at Baker Street, for suburban traffic; and many for the purpose of connecting the various railways one with the other.

Railways outside this central area.

The necessity imposed on all the railways of making their connections without infringing on the central area, however expedient (if it was expedient) the exclusion of railways from that area may have been, has had an unfortunate effect on the railway system, taken as a whole. The connections which have actually been made are not nearly so useful for local traffic, or so convenient for connecting purposes, as they might have been, if the central area had not been barred, nor do they harmonise so well with comprehensive urban and suburban railway schemes designed to meet modern needs.

Inconvenience arising from the exclusion of railways from the central area.

All that can be said is that, notwithstanding the difficulties, connections, of one kind or another, have been made outside the prohibited area, and there now exist physical connections between practically every line entering London. But, in a railway system, physical connection is not enough. The important thing is, not the existence of a connecting line, but the location of that line, and the character of the train services run upon it. Unless the connections are made on some definite and comprehensive scheme, designed to create travelling facilities between well selected points, in directions fixed to meet the public requirements, along carefully chosen routes, on which convenient train services can be run between suitable termini, they may afford physical means of connection, but they do not adequately contribute to that complete and harmonious system of railway communication which public convenience demands.

127. The next feature that is apparent is the large number of branches which have been thrown out by existing railways for the purposes of securing suburban traffic. The method usually adopted for serving that traffic has been, not to make a separate line from a suburban district direct to a new terminus in London, opening up and serving the whole of the intermediate area, but to make a spur or branch from an existing railway to the district needing accommodation. This method has secured the result aimed at with the least expenditure of capital: it has much to commend it. It certainly secures the development of more residential districts than could, within the limits of practical finance, be provided with railways extending to new terminal stations in London. It brings to existing railways additional traffic, which, by strengthening their resources, enables them to add to their accommodation in other directions. But the method ceases to be advantageous when the final section of the approach to the London terminus becomes too crowded with trains. If too many branches are made, the train services, which have to be run on the final approach lines to London, become so numerous

Branches constructed from main lines to serve suburban traffic.

¹ Charing Cross to Euston.

Advantages and disadvantages of this policy.

that the Company are unable to deal with them on their approach lines and at their termini without very costly alterations. At what stage this condition is reached is a question of fact which can only be determined by examination of the particular circumstances of each case. A railway company is no doubt always open to considerable temptation to continue the policy of bringing additional traffic to its existing lines even after that policy has ceased to be wise, and thus to expose itself to the risk of having to deal with more traffic than the lines can carry or the stations can properly accommodate. This is an evil which must be carefully avoided, and which would be less likely to occur if there were better general supervision of railway construction. But, having regard to the immense cost of making new terminal approaches within London, we think that the plan of serving suburban districts by spurs or branches out of existing lines ought always to be followed, promoting, as it does, a judicious economy in the expenditure of capital, until it has become apparent that the lines and terminal stations of an existing railway have reached the limit of their capacity.

The Metropolitan and Metropolitan District Railways, originally urban lines,

128. The Metropolitan and Metropolitan District Railways, which were originally designed for purely urban traffic, have had a different suburban development from that of the lines of other companies.

did not afford sufficient facilities for central urban traffic,

The inquiries by the Royal Commission on Metropolitan Railway Termini, 1846, and the Select Committee of the House of Lords on Metropolitan Railway Communication, 1863, referred to in paragraphs 36 and 42 of our Report, resulted in a definite conclusion against railways entering or passing through the central area, and in favour of a circular railway connecting the main line termini. The "Inner Circle" system of the Metropolitan and Metropolitan District Railway Companies was subsequently constructed, but experience has unfortunately proved that the anticipations of the promoters were not well founded, and that a railway laid out on a circle was not capable of affording sufficient or convenient facilities for central urban movement.

Some part of the want of success of the "Inner Circle" system may have been due to the physical discomfort of travelling in a long tunnel, fouled by the dirt and the smoke which are inseparable from working by steam.¹

But, whatever the causes, there can be no doubt that the idea of a circular railway failed in practice to afford, either the extent, or the kind of communication, required in the central urban area, and the circular service has not, in fact, been used to the extent anticipated, the lines being, in practice, mainly used for travel from west to east, and *vice versa*, on the northern and southern halves of the "Inner Circle."²

The portions of the system from Bishop's Road to the City and beyond, and from Earl's Court to the City and beyond, carry a very large traffic, each of these sections having its own gathering ground, and carry in addition the suburban passengers which come from beyond Baker Street, Edgware Road and Earl's Court, in the west, and from beyond Aldgate, in the east. It is this east and west traffic which has been the really important traffic of the "Inner Circle" Railway.

Railway Plan, p. 78.

The experience gained from the construction of the "Inner Circle," therefore, confirms the view that it is east and west lines in the central area that are chiefly wanted, but the location of the northern and southern halves of the "Inner Circle," though providing lines for the east and west traffic, rendered it impossible for them to afford all the accommodation required for the very large east and west traffic within the whole of the central area.

but now carry suburban traffic.

The two Companies concerned have, for several years, followed a policy of suburban development, and now carry an immense number of suburban passengers into London. The conversion of railways, originally intended for purely urban purposes, into what are now practically the terminal approaches in London of suburban railways, has been criticised; but we see no reason

¹ See Report of Metropolitan Railway (Ventilation of Tunnels) Committee "appointed 2nd February, 1897, by the Board of Trade" to inquire into the existing system of ventilation of "tunnels on the Metropolitan Railway, and report whether any, and if so, what steps can be taken "to add to its efficiency in the interests of the public." 1897, Parliamentary Paper, (C. 8684), XLV, 135.

² Mr. Ellis, Q. 24593 Mr. R. W. Perks, M.P., Qq. 19602 *et seq.*—Vol. II.

to condemn the policy which has been followed, under the conditions which existed, and we think that the use of these lines for suburban traffic can be made, and probably will be made, to harmonise with their original function as urban railways.

129. The next great advance in the provision of central urban railway accommodation arose from the introduction, almost simultaneously, of the deep level "tube" system of construction, and of the adaptation of electricity as a motive power for railway working. The history of the introduction of these railways has already been given in paragraphs 50 to 53 of this Report. "Tube" railways.

The inquiries by the several Royal Commissions and Select Committees to which we have referred, practically did not touch the subject of suburban railway facilities: that was left to the isolated and fluctuating action of Select Committees on Private Bills with respect to individual schemes privately promoted. The history of the railway system in London shows that the lines made for the accommodation of outer-urban and suburban traffic have been allowed to grow up without any general guidance. Each section of line has been projected on purely local considerations. The laying out of each line has been designed exclusively in the interests of its promoters, and no attempt has been made by any public authority to co-ordinate it with any general design. The central urban railway communication, on the other hand, was dealt with in the first instance on the rigid plan of a circle round the central area, and that plan, we think, a wrong one, although, under the conditions prevailing until deep-level "tube" railways and electric traction were introduced, it may have been an inevitable outcome of the practical situation.

130. We do not think that any advantage would be gained by our describing in detail the construction of the railways outside the central area. The stages of their growth will be best seen by referring to the four valuable maps prepared under the direction of Mr. R. W. Perks, M.P., for the use of the Commission. These maps will be found on Plate LXXX, Volume VI.

Growth of the railway system outside the central area

By examining the four maps in question, it will be seen at a glance what railways existed in 1845, and what additions were made during the specified periods.

The route mileage additions within the Administrative County of London, as shown by the above-mentioned maps, were as follows:—

| | | | | | |
|-------------------|-----|-----|-----|-----|--------------|
| From 1845 to 1860 | ... | ... | ... | ... | 39·5 miles ; |
| From 1860 to 1880 | ... | ... | ... | ... | 146 miles ; |
| From 1880 to 1900 | ... | ... | ... | ... | 33·25 miles. |

These maps also show very clearly how the whole course of railway construction around London was influenced by the policy adopted in excluding railways from the central area.

Plate
LXXX,
Vol. VI.

The total length of railways existing in "Greater London" in the year 1903 was shown in the following tables put in by Mr. Harper, the Statistical Officer of the London County Council.

1. LENGTH OF RAILWAYS IN GREATER LONDON—ACCORDING TO SECTIONS.

| Section. ² | Length of Railway in Route Miles. | | | Length per Square Mile. | | | Population per Route Mile. | | |
|-----------------------------|-------------------------------------|--------------------|----------------------|-------------------------------------|--------------------|----------------------|-------------------------------------|--------------------|----------------------|
| | In Administrative County of London. | In "Extra London." | In "Greater London." | In Administrative County of London. | In "Extra London." | In "Greater London." | In Administrative County of London. | In "Extra London." | In "Greater London." |
| | Miles. | Miles. | Miles. | Miles. | Miles. | Miles. | | | |
| Western - - - - - | 35·3 | 100·1 | 135·4 | 2·09 | ·63 | ·77 | 23,427 | 4,196 | 9,210 |
| Northern - - - - - | 43·7 | 67·3 | 111·0 | 2·20 | ·52 | ·74 | 26,161 | 6,196 | 14,056 |
| Eastern - - - - - | 26·6 | 65·3 | 91·9 | ·99 | ·69 | ·85 | 30,691 | 11,524 | 16,231 |
| Total, north of the river - | 105·6 | 232·7 | 338·3 | 2·11 | ·61 | ·78 | 26,388 | 6,692 | 12,707 |
| South-eastern - - - - - | 66·7 | 86·4 | 153·1 | 1·62 | ·84 | 1·06 | 12,562 | 3,424 | 7,404 |
| South-western - - - - - | 49·3 | 58·9 | 108·2 | 1·91 | ·66 | ·94 | 18,438 | 4,071 | 10,617 |
| Total, south of the river - | 116·0 | 145·3 | 261·3 | 1·74 | ·75 | 1·01 | 15,059 | 3,686 | 8,735 |
| Grand Total - | 221·6 | 378·0 | 599·6 | 1·90 | ·66 | ·86 | 20,458 | 5,516 | 10,976 |

2. NUMBER OF RAILWAY STATIONS IN GREATER LONDON—ACCORDING TO SECTIONS.

| Section. ² | Number of Stations. | | | Number of Stations per Square Mile. | | | Number of Inhabitants per Station. | | |
|-----------------------------|-------------------------------------|--------------------|----------------------|-------------------------------------|--------------------|----------------------|-------------------------------------|--------------------|----------------------|
| | In Administrative County of London. | In "Extra London." | In "Greater London." | In Administrative County of London. | In "Extra London." | In "Greater London." | In Administrative County of London. | In "Extra London." | In "Greater London." |
| Western - - - - - | 53 | 60 | 113 | 3·14 | ·38 | ·64 | 15,603 | 7,001 | 11,036 |
| Northern - - - - - | 70 | 55 | 125 | 3·52 | ·43 | ·84 | 16,332 | 7,582 | 12,482 |
| Eastern - - - - - | 46 | 51 | 97 | 3·62 | ·54 | ·90 | 17,747 | 13,241 | 15,378 |
| Total, north of the river - | 169 | 166 | 335 | 3·42 | ·43 | ·77 | 16,489 | 9,111 | 12,833 |
| South-eastern - - - - - | 60 | 47 | 107 | 1·46 | ·45 | ·74 | 13,964 | 6,294 | 10,595 |
| South-western - - - - - | 46 | 43 | 89 | 1·78 | ·48 | ·77 | 19,761 | 5,576 | 12,908 |
| Total, south of the river - | 106 | 90 | 196 | 1·59 | ·47 | ·76 | 16,480 | 5,951 | 11,645 |
| Grand Total - | 275 | 256 | 531 | 2·36 | ·44 | ·77 | 16,485 | 8,000 | 12,394 |

¹ Mr. Harper, Appendix No. 6, Table 29, p. 156, Vol. III.

² For description of these Sections see Mr. Harper, Appendix No. 6, p. 123 ; also Plate V, Vol. V.

³ Mr. Harper, Appendix No. 6, Table 31, p. 166, Vol. III.

For further details see Report of Advisory Board of Engineers, Table LIII, p. 100, Vol. VII.

131. Before leaving our survey of the railway system as now existing, it may be convenient to make one general remark as to the defects of that system. These defects are very largely due to the manner in which the connecting lines have been laid out, and to the deficiency of adequate means of terminal distribution, caused by the exclusion of railways from the central area. Some of the defects, so far as the harmony and aim of the general design are concerned, are the outcome of the disadvantages of separate ownership, which must always be submitted to if it is desired to secure the correlative advantages of competition. Each connection has been made, and each line has been laid out, in the individual interests of the competing companies without much regard to the interests and needs of the railway system of London taken as a whole.

Causes of the defects of the existing railway system.

Supra, par. 43.

In the Report of the Select Committee of the House of Lords on Metropolitan Railway Communication in 1863, it was recommended that every system of internal railway communication should be under one management. This desirable result was not secured, and we have no doubt that the public interests have suffered from antagonisms between the various railway companies, and that a much better result would have been obtained if there had been more unity of ownership and management. Complete unity of interest can only be secured through extensive amalgamations, but, short of this, the existence of some controlling authority of the character of the Traffic Board, the establishment of which we recommend in Part III of our Report, would have imposed a useful check on the evils arising from diversity of management.

Questions for Consideration in the Present Day.

132. We are now in a position to summarise the principal questions which we have to consider with a view to making recommendations thereon. These are :

1. Whether additional railways are required within the central area before referred to,¹ and, if so, in what directions, and to serve what particular purposes they should be made, and whether, as deep-level "tubes," or according to any other mode of construction ;

Additional railways in the central area.

2. Whether the existing facilities for suburban traffic are adequate and are fully and properly utilised ;

Facilities for suburban traffic.

3. Whether any special encouragement or assistance is required in order to secure the construction in the future of such additional railways as may be required for the accommodation of suburban traffic, and for opening up new districts for suburban residence.

Special assistance towards the construction of railways.

It is not practicable to isolate completely each of these questions, and treat it separately, for they overlap each other, and ought to be dealt with together.

Many of the matters covered by these questions can only be dealt with in a general way. We cannot, from the necessity of the case, attempt to arrive at any definite decisions on such questions as the adequacy of railway accommodation in a particular district, or the sufficiency of the train service on a particular line.

Such questions cannot be dealt with in detail by present Commission.

To determine such questions, detailed and prolonged investigations are necessary. The public necessity for a new line requires full investigation by Parliament, so that all questions of construction, finance, and effect upon existing interests opposing the scheme, may be fully considered before statutory authority is given. Before a particular scheme reaches a Select Committee of Parliament, it has been carefully considered by its promoters, and the professional men advising them, and it is obvious that no general inquiry by a Royal Commission can cover the ground necessary to be covered before a conclusion can be arrived at in regard to any particular scheme. All we can hope to do is to form some general conclusions as to the railway facilities required in London, and whether,

¹ This 'central area' is different from, and must not be confused with, the 'central area' referred to by Mr. Harper, and by the Advisory Board of Engineers.

on the whole, these facilities are being, or are likely to be, adequately provided.

Relative importance of terminal stations as determined by number of passengers dealt with thereat.

133. In considering the railway communications required within the central area, and the best means of linking up central urban railways with the railways which bring suburban traffic into London, it is necessary to keep in mind the actual location of the stations of a terminal character, that is to say, those which deal with the largest number of passengers.

Viewed from the traffic standpoint, the relative importance of the principal stations of a terminal character in London is shown by the following table, prepared by the Advisory Board of Engineers, giving the number of passengers dealt with in one year at each of the stations named.

Vol. VIII, Appendix Report of Advisory Board, Table 66.

TABLE SHOWING THE NUMBER OF PASSENGER JOURNEYS TO AND FROM STATIONS OF A TERMINAL CHARACTER WITHIN THE CENTRAL AREA OF LONDON DURING THE YEAR 1903.

| SECTION, TERMINUS, AND RAILWAY. | Ordinary Journeys. | Journeys by Season Ticket Holders. | TOTAL. | REMARKS. |
|--|--------------------|------------------------------------|------------|---|
| WESTERN SECTION. | | | | <i>General Note</i> :—Unless otherwise stated, it is assumed that season ticket holders made 12 journeys each per week.

Of the total number of Bishop's Road passengers, about 12 per cent. travel in Kensington and Earl's Court trains, 40 per cent. in Hammersmith and Richmond trains, 38 per cent. in City trains, and 10 per cent. in Great Western main line trains.

Season ticket holders assumed to have made 6 journeys each per week, there being no short distance traffic.

In addition to these a number of passengers from the "Inner Circle" use this station by means of the east exit and entrance. Journeys to and from stations south of King's Langley numbered 2,870,000, and to and from King's Langley and stations north thereof are estimated at 1,599,500. |
| At Paddington and Bishop's Road (Great Western and Great Western and Metropolitan Joint Railways). | 6,494,832 | 2,678,784 | 9,173,616 | |
| At Marylebone (Great Central Railway). | 381,674 | 89,232 | 470,906 | |
| At Baker Street (Metropolitan Extension Railway). | 10,022,167 | 3,228,020 | 13,250,187 | |
| At Euston (London and North Western Railway). | 2,600,720 | 1,868,780 | 4,469,500 | |
| TOTALS . . . | 19,499,393 | 7,864,816 | 27,364,209 | |
| NORTHERN SECTION. | | | | Of the total number of ordinary journeys, 344,746 were to and from Hendon and stations south thereof, 1,887,888 to and from stations north of Hendon, and 100,075 <i>via</i> St. Pancras to stations south of London, besides 148,832 journeys in Great Eastern trains, by which 77,376 journeys were also made by season ticket holders, calculated on the basis of 12 journeys per week for tickets available up to 30 miles, and six journeys per week for tickets available for a longer distance.

Season ticket holders assumed to have made 12 journeys each per week. |
| At St. Pancras (Midland Railway) . | 2,481,541 | 7,285,200 | 9,766,741 | |
| At King's Cross and York Road (Great Northern Railway). | 7,112,485 | 8,264,880 | 15,377,365 | |
| At Broad Street (North London Railway). | 16,850,820 | 9,843,816 | 26,694,636 | |
| TOTALS . . . | 26,444,846 | 25,393,896 | 51,838,742 | |

1 This station is outside the central area.

TABLE showing the Number of Passenger Journeys to and from Stations, &c.—continued.

| SECTION, TERMINUS AND RAILWAY. | Ordinary Journeys. | Journeys by Season Ticket Holders. | TOTAL. | REMARKS. |
|---|--------------------|------------------------------------|-------------|--|
| <u>EASTERN SECTION.</u> | | | | |
| At Liverpool Street (Great Eastern Railway). | 45,233,170 | 20,066,280 | 65,299,450 | Between London and stations distant 12 miles and under, 59,202,127 journeys, between 12 and 30 miles 2,456,062, and over 30 miles 3,641,261. Journeys <i>via</i> Liverpool Street excluded in cases where it was not necessary for the passenger to leave the station. Season ticket journeys calculated as in case of Great Eastern traffic to St. Pancras. |
| At Fenchurch Street (Great Eastern Railway and London, Tilbury and Southend Railway). | 18,396,520 | 5,528,328 | 23,924,848 | By Great Eastern trains between London and stations distant 12 miles and under 10,543,465 journeys, between 12 and 30 miles 104,251, and over 30 miles 12,342. Season ticket journeys calculated as in case of Great Eastern traffic to St. Pancras. London, Tilbury and Southend traffic by the trains of other companies to all Metropolitan District stations 2,493,544, to all Metropolitan stations 230,345, to St. Pancras 195,153 and to Liverpool Street 35,580. |
| TOTALS - - - | 63,629,690 | 25,594,608 | 89,224,298 | |
| <u>SOUTH-EASTERN SECTION.</u> | | | | |
| At London Bridge (London, Brighton and South Coast Railway). | 14,027,619 | 9,713,057 | 23,740,676 | For the year 1902. |
| At London Bridge (South Eastern and Chatham Railway). | 4,029,687 | 2,013,020 | 6,042,707 | |
| At Cannon Street (South Eastern and Chatham Railway). | 9,196,243 | 4,343,120 | 13,539,363 | *The journeys by season ticket holders at the various S. E. & C. R. Stations have been estimated, the total being based upon the actual number of season tickets issued by the Company available in London. |
| At St. Paul's (South Eastern and Chatham Railway). | 2,561,462 | 1,230,230 | 3,791,692 | |
| At Ludgate Hill (South Eastern and Chatham Railway). | 3,279,909 | 1,534,450 | 4,814,359 | |
| At Holborn Viaduct (South Eastern and Chatham Railway). | 7,212,628 | 3,456,310 | 10,668,938 | |
| At Waterloo Junction (South Eastern and Chatham Railway). | 1,870,489 | 845,240 | 2,715,729 | |
| At Charing Cross (South Eastern and Chatham Railway). | 6,852,847 | 3,321,420 | 10,174,267 | |
| TOTALS - - - | 49,030,884 | 26,456,847 | 75,487,731 | |
| <u>SOUTH-WESTERN SECTION.</u> | | | | |
| At Waterloo (London and South Western Railway). | 22,268,000 | 8,732,000 | 31,000,000 | Approximate estimate supplied by Railway Company. |
| At Vauxhall (London and South Western Railway). | 2,208,456 | 16,224 | 2,224,680 | Approximate estimate supplied by Railway Company. |
| At Victoria (South Eastern and Chatham Railway). | 7,371,499 | 3,487,538 | 10,859,037 | |
| At Victoria (London, Brighton and South Coast Railway). | 12,612,179 | 5,947,615 | 18,559,794 | For the year 1902. |
| ¹ At Addison Road (West London and West London Extension Railways). | 3,104,010 | 1,000,000 | 4,104,010 | The proportion of ordinary and season ticket holders' journeys is estimated. |
| TOTALS - - - | 47,564,144 | 19,183,377 | 66,747,521 | |
| GRAND TOTALS - - - | 206,168,957 | 104,493,544 | 310,662,501 | |

¹ This station is outside the central area.

Facilities for communication between the eastern termini and the central urban railways.

It will be seen from the above table that the stations¹ on the eastern side of the central area deal with a larger number of passengers than any other group of contiguous stations, their aggregate being about 116 millions, or 37 per cent., of the total dealt with at all the stations named.

Yet, although the terminal stations on the eastern side of the central area are the most important, from the point of view of the number of passengers, their facilities for communication with the central urban railways are imperfect.

It was stated, however, in evidence by Mr. Ellis,² the General Manager of the Metropolitan Railway, that, when the electrification of that railway is completed, probably a two-minutes service will be run, which will serve Bishopsgate Station, on that railway, adjoining Liverpool Street and Broad Street Stations. If this were done, we think the public needs would be met, so far as communication between the Liverpool Street and Broad Street Stations and stations on the Metropolitan and Metropolitan District Railways are concerned.

The nearest stations to Fenchurch Street (L.T.S.R. and G.E.R.), which deals with 24 million passengers annually, are Mark Lane and Aldgate on the "Inner Circle" Railway, and these stations can only be reached through the streets.

It would be a public convenience if better means of communication existed whereby the large number of passengers arriving at Fenchurch Street Station could, by means of some convenient interchange station, or stations, or subways, get access to a two-minutes service on all the central urban railways.

Facilities at King's Cross and St. Pancras stations ;

134. The stations next in importance to those on the east of the central area, from the point of view of the number of passengers handled at them, are King's Cross (G.N.R. and Met. R.) and St. Pancras (M.R.); we take these together, because they use the same lines to gain access to the City. Including, not only the passengers dealt with at the King's Cross and York Road Stations of the Great Northern Railway, but also those dealt with at the King's Cross Station of the Metropolitan Railway,³ the combined number of passengers dealt with at King's Cross and St. Pancras is nearly 44,000,000 annually.

Through trains are run via York Road—King's Cross (G.N.R.), and via St. Pancras (M.R.), over the widened lines of the Metropolitan Railway to Moorgate Street (Met. R.). A considerable number, however, of the suburban trains arriving from the Great Northern and Midland systems are not, and cannot be, run through to Moorgate Street, or beyond: they arrive at the King's Cross (G.N.R.) suburban terminal station or at St. Pancras, as the case may be, and the passengers arriving by those trains, who desire to reach the Metropolitan Railway, have to find their way to the King's Cross Station on the Metropolitan Railway, either by changing carriages before reaching the main terminus, or, in the case of the Great Northern passengers, by crossing under Euston Road by a subway.

When the "tube" railways now authorised or under construction are completed, passengers arriving at King's Cross (in addition to the existing facilities of interchange with the Metropolitan Railway) will be able to get the trains on the City and South London Railway, and the Great Northern, Piccadilly and Brompton Railway; and passengers arriving at St. Pancras will be able to get the trains on the City and South London Railway. So far as Great Northern passengers are concerned, they have at Finsbury Park the existing facilities of interchange with the Great Northern and City Railway, and will also be able to join, at Finsbury Park, the trains of the Great Northern, Piccadilly and Brompton Railway. Midland passengers will also be able to join the Charing Cross, Euston and Hampstead Railway at Kentish Town.

These "tube" railways will not only afford to those passengers alternative routes to City stations, but will also carry the passengers across the central area; so far, therefore, as the passengers of the Great Northern and Midland systems are concerned, they will then be fairly well provided with means of railway communication with the central area.

¹ Broad Street, Liverpool Street and Fenchurch Street Stations.

² Mr. Ellis, Q. 24601, Vol. II

³ See Vol. VIII, Appendix to Report of Advisory Board, Table 68.

135. Euston Station (L.N.W.R.) has at present no connection with any central urban railway: the distance from that station to the Gower Street Station of the Metropolitan Railway is too far along the streets to make a really convenient interchange. *Euston Station ;*

Railway Plan, p. 78. The policy of the London and North Western Railway Company appears not to have been directed to the development of suburban traffic on their main lines to the same extent as the other great railways in London. Whilst noting that policy, we have no wish to condemn it. It may be a wiser policy, even from the point of view of public convenience, to leave the facilities required for additional suburban traffic to be supplied by the construction of other railways or tramways, rather than to attempt to provide them by increasing facilities on crowded lines and in crowded terminal stations.

The present isolation of Euston will be, to a great extent, cured when the "tube" railways, authorised and under construction, are completed, as passengers arriving at Euston Station will be able to interchange with the City and South London Railway and with the Charing Cross, Euston and Hampstead Railway. By the latter railway they will be able to reach Charing Cross Station (S.E.C.R.) or again to interchange from it with the Great Northern, Piccadilly and Brompton Railway at the Cranbourne Street Station of that railway.

136. Baker Street Station (Met. R.) is the terminus of all the suburban trains on the Aylesbury Line of the Metropolitan Railway. *Baker Street Station ;*

There are no trains from that line running through Baker Street, but all the passengers change carriages at that station, using, for further transit on the Metropolitan Railway, the "Inner Circle" trains, and the other trains running on the northern section of the "Inner Circle."

Mr. R. W. Perks, M.P., said in his evidence¹ that the Metropolitan District Railway Company were desirous of discontinuing the "Inner Circle" trains, and substituting "shuttle" services² between Edgware Road and South Kensington, treating the main lines of the Metropolitan and Metropolitan District Railways as through west and east routes. Mr. Ellis, the General Manager of the Metropolitan Railway, on the other hand, indicated³ that he hoped, after the electrification of the line has been completed, to run a five-minutes service round the "Inner Circle." The practical method of fitting in the various services must, of course, be left to the railway managers, but we think that no method should be adopted which, either hampers the running of as many through trains as possible from places westward of Edgware Road, or in any way prevents the running of at least a two-minutes service on the section of the "Inner Circle" between Edgware Road and Bishopsgate.

Baker Street Station, after the "tubes," now authorised or under construction, are completed, will have interchange with the Baker Street and Waterloo Railway, passengers by the latter railway being able to reach Waterloo Station (L.S.W.R.), or interchange with the Great Northern, Piccadilly and Brompton Railway at Piccadilly Circus. The urban railway facilities available for passengers at Baker Street will therefore be fairly complete.

Passengers from the Great Western Railway, desiring to pass beyond Paddington (G.W.R.), require to get, by interchange either to Praed Street or Bishop's Road Stations, to reach the Metropolitan Railway, but a certain number of Great Western trains run through to Moorgate Street and beyond over the Metropolitan Railway. An extension of the Baker Street and Waterloo Railway to, and connecting with, Paddington has been authorised by Parliament, and is under construction, and this will improve the access from the Great Western system to a considerable portion of the central area.

If, on further consideration, it should appear to the responsible managers concerned that the proper way of working the "Inner Circle" Railway between Edgware Road and South Kensington is by a "shuttle" service, such a course may render it possible to improve the access of Great Western trains to the

¹ Mr. R. W. Perks, M.P., Q. 19603 *et seq.*, Vol. II

² Mr. R. W. Perks, M.P., Q. 19926, Vol. II.

³ Mr. Ellis, Q. 24601, Vol. II.

City, and it seems to us that the connections between the Great Western Railway and the central urban system of railways require improvement.

The Great Western Company themselves have introduced a Bill into Parliament during the present Session to authorise the making of a new loop from their railway at Ealing Station to the West London Railway between Wormwood Scrubs and Uxbridge Road Stations, with an extension railway to Shepherd's Bush, where there would be interchange connection with the Central London Railway.

Earl's Court Station ;

137. Earl's Court Station (M.D.R.) is the point where all the suburban trains from the western sections of the Metropolitan District Railway converge, and from that station they have direct through running to the Mansion House Station and beyond. Railway Plan, p. 78

When the "tube" railways, now authorised or under construction, are completed, the Metropolitan District Railway will have interchange connection with the Great Northern, Piccadilly and Brompton Railway at South Kensington, and at Gloucester Road, Earl's Court, Baron's Court and Hammer-smith, with the portion of the deep-level Metropolitan District Railway which is being constructed as an extension of the Great Northern, Piccadilly and Brompton Railway, and with the Baker Street and Waterloo Railway at Charing Cross. Thus the suburban passengers from the suburbs served by the Metropolitan District Railway, will be provided with additional central urban communications.

Victoria Station ;

138. Victoria Station (L.B.S.C.R. and S.E.C.R.), at which more than 29 millions of passengers are dealt with annually by the South Eastern and Chatham, and the London, Brighton and South Coast Railway Companies, has no facilities for through running, and such facilities over the Metropolitan District Railway are obviously out of the question.

The interchange with the Victoria Station on the Metropolitan District Railway is by means of a subway, and, at that station, passengers will reach the proposed full service¹ on the Metropolitan District Railway, and by further interchange will reach the "tube" railways which will be in interchange connection with the Metropolitan District Railway at Charing Cross.

Passengers going north of Charing Cross will, however, have two changes of carriage, one at Victoria and one at Charing Cross, and, under present conditions, more, unless they are bound for some station on the route of the Baker Street and Waterloo or Charing Cross, Euston and Hampstead Railways. It cannot be said that the provision for passengers arriving at Victoria Station is, or will be, adequate or satisfactory.

There would be great advantages if, at some future time, a through north and south connection could be made between Victoria and the Marble Arch terminus of the authorised North West London Railway, and perhaps, for this purpose, the subway, which we have recommended under the eastern edge of Hyde Park in the chapter of our Report dealing with Tramways might be utilised for at least part of the route. If this should prove possible, connection could be given by interchange with all the main east and west routes through London. Chapter VI
supra.

Charing Cross Station ;

139. Charing Cross Station (S.E.C.R.), at which 10 millions of passengers are dealt with annually, will, by a short walk through the streets, be in interchange connection, not only, as at present, with the Charing Cross Station on the Metropolitan District Railway, but also with the Embankment Station on the Baker Street and Waterloo Railway, and will also have interchange with the Charing Cross, Euston and Hampstead Railway, and, by a second interchange at Cranbourne Street, with the Great Northern, Piccadilly and Brompton Railway.

¹ Mr. R. W. Perks, M.P. Q. 19978, Vol. II.

140. Waterloo Station (L. S. W. R.) at which 31 millions of passengers are dealt with annually, is connected with the City by the Waterloo and City Railway, and will also have interchange connection with the Baker Street and Waterloo Railway. *Waterloo Station ;*

141. St. Paul's Station (S. E. C. R.), at which nearly 4 millions of passengers are dealt with annually, is in interchange connection with the Blackfriars Station of the Metropolitan District Railway. *St. Paul's Station ;*

142. Cannon Street (S. E. C. R.), a station at which over 13½ millions of passengers are dealt with annually, is connected with the Metropolitan and Metropolitan District Railways by an interchange station at Cannon Street ; and London Bridge Station (L. B. S. C. R.), at which nearly 24 millions of passengers are dealt with annually, is in interchange connection with the London Bridge Station of the City and South London Railway. *and
Cannon Street, and
London Bridge
Stations.*

Recommendations : (a) Railways.

143. We have come to the conclusion that, when the "tube" railways already authorised have been completed, with the addition of the line we have suggested from Victoria to Marble Arch, the most pressing requirements of railway communication within the central area, as distinguished from the suburbs, will have been fairly provided for. We think, however, that greater attention should be paid to providing interchange stations, wherever lines running north and south intersect those running east and west ; and that, wherever it is possible, this accommodation for the public should be afforded. We think also that, in regard to both the suburban and central urban railway systems, there should be better connection to the north-east of London ; and better connection between the suburban systems on the east and the suburban systems on the west, with the object of improving central urban communication, and providing passengers with fuller facilities than they now possess, by convenient interchange stations, for reaching all principal points within the central area served by the central urban railways. *Necessity for
further north-east
and east and
west railway
facilities.*

Supra, par.
69.

144. One way of providing a better communication between east and west has been suggested by the Advisory Board of Engineers, namely, the construction of a great avenue with four railway tracks underneath it. We have already dealt with this proposal in discussing street improvements.

Another route giving west and east connection is that from Hammersmith to the City, *via* Kensington, Piccadilly, and the Strand. Various proposals have been made by private promoters for the construction of underground railways along this line. Mr. Fitzmaurice,¹ Engineer to the London County Council, laid before us an approximate estimate of the cost of a shallow tramway "subway" from Hammersmith to Bishopsgate, and from Bishopsgate along the Kingsland Road to the county boundary. We asked the Advisory Board of Engineers to examine the suggestion for a subway from Hammersmith to the City, and they refer to the subject in pages 105 to 110 of their Report.

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Board,
pp. 105
et seq.

The choice between the methods of providing the means of such communication is a matter involving detailed and protracted consideration, and the final decision will partly depend on the choice made in regard to other improvements and their priority in point of time. This is one of the questions that would no doubt be fully considered by the Traffic Board, to which we hereinafter refer in Part III of this Report, before which any definite proposals would come.

¹ Mr. Fitzmaurice, Appendix No. 9, p. 274, Vol. III.

Difficulty experienced in raising capital for underground railways.

Mainly due to moderate pecuniary returns.

145. The question whether new urban railways are required is not the only one that has to be considered : there is also the question of finance. A marked feature in connection with underground railways of all classes has been the difficulty experienced in raising the necessary capital. In the first instance, this was no doubt due to the unusual nature of the enterprise, but its continuance up to the present time is due to the fact that the railways that are at present in operation have not given very satisfactory results from a pecuniary point of view. The capital cost of the Metropolitan and Metropolitan District Railways in the more crowded portions of London was very heavy, though it should be recollected that the nominal capital of the latter undertaking was increased by the adverse conditions under which it was raised. The first "tube" railway, the City and South London, was cheaply constructed, but only pays a moderate rate of interest on the capital expended. The other "tube" railways, either actually working or under construction, excluding the Waterloo and City line, have a much higher capital per mile, and, though the Central London Railway is doing well, it must be remembered that it occupies a favourable situation.

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Board,
Table
LVII,
p. 106.

Heavy capital cost of "tube" railways.

The capital of underground railways, under existing conditions, may amount to from £500,000 to £1,000,000 per mile, and a very heavy traffic is required to pay a fair rate of interest on a capital of this magnitude.

Private enterprise preferred.

But notwithstanding the difficulties imposed by high cost of construction, we think—and this applies to railways beyond as well as within the central area—that, as in the past, so in the future, London should, as far as possible, rely wholly upon private enterprise for the construction of new railways.

Private enterprise can, we hope, be relied on to provide as many railways as are required, provided that such railways are made and worked, as in our judgment they ought to be, on a commercial basis.

Sir Henry Oakley supplied us with a list of Bills for new railways within the "Inner Circle," which had been promoted within a period of 48 years. This list will be found in Appendix, No. 57, Statements M and N, pp. 605 to 611, Volume III. There were 43 Bills between 1855 and 1885, and 83 Bills between 1886 and 1903 inclusive. Out of the Bills promoted in the latter period, which is the one that mainly concerns us, 59 were either withdrawn or not passed by Parliament. Of the remainder, 7 of the authorised undertakings have been completed and opened for traffic, 11 are now under construction, and 6 are not yet commenced, although, no doubt, several of these will be proceeded with.

Plates
LXXVII
and
LXXVIIIa,
Vol. VI.

It is hardly to be expected that, under our system of promotion of Bills by private promoters, all schemes which succeed in passing through Parliament are equally well conceived, or that there is behind them equal financial ability to carry them out. Some fail from inherent defects or financial weakness. A sufficient number however remain to justify the hope that there is no need, as yet, to make an alteration in the present system of private promotion in the direction of looking to public sources for any part of the funds required for railway enterprise, unless undue financial obligations are thrown upon the railway undertakings, either in respect of works or compensation, or in regard to the carriage of passengers at unremunerative fares, or otherwise.

All that in our judgment is necessary, is to see that no discouragement shall be created for private enterprise by the system of procedure under which railway undertakings are authorised, or by the imposition of undue burdens on, or exaction of impossible conditions² from, promoters.

Remedy for uncertainty connected with existing procedure : examination by Traffic Board.

146. The great uncertainty of the present system of procedure is perhaps a greater evil than its cost, and we look to the influence of the proposed Traffic Board as likely to effect an improvement in this respect. Schemes would be thoroughly examined, before being submitted to Select Committees in Parliament by an authority, charged with the duty of sub-

¹ Sir D. Fox, Q. 13958. Mr. Gooday, Qq. 18515, 18517, 18528. Sir H. Oakley, Qq. 18600, 18619, 18629.—Vol. II.

² Sir D. Fox, Q. 14052 *et seq.*, Vol. II.

stituting considered and comprehensive general design, for the individual scramble of promoters for the best sections of the best routes, which has hitherto prevailed.

While we are hopeful that private enterprise can be relied on to construct all the new railways that will be really required, we think that great care should be taken not to impose on new railway undertakings burdens which are not directly related to the works proposed to be constructed in connection therewith. The cost of street improvements and works of that character ought not, we think, to be charged on railway undertakings, although, in some cases, such works might be jointly arranged with advantage both to the railway company and the municipality.

Importance of not imposing onerous conditions on proposed railways.

Encouragement to railway construction might be afforded by the adoption of a suggestion made in evidence by Mr. R. W. Perks, M.P.¹. A new railway made to serve a district not yet built over cannot, except in rare cases, where railway construction is as costly as in London, obtain a remunerative traffic from the date of its opening. If those who undertake to construct the railway are permitted in their Act to buy land by agreement in the district to be served, so that they may share in the benefit to be derived from the increase in the value of land, which invariably follows the making of a railway, this would facilitate the construction of new railways which are, and will become, necessary. We think that power to buy land under such circumstances should be conferred on railway companies.

Sanction to purchase of land by agreement.

(b) Railways in Shallow Subways.

147. We have given much consideration to the question whether future railways in the central area, and in the outer areas, which are already being covered with buildings, should be made in shallow subways or in deep-level "tubes."

The question of the relative advantages of "shallow" railways and "tubes"² is so important for the future that we think it necessary to discuss the subject at some length.

Comparative advantages of "tube" railways and of railways in shallow subways.

The existence of a thick and continuous bed of clay³ under London on the north side of the Thames was the main inducement for the adoption, since 1889, of cast-iron tubes for deep-level underground railways.

The case⁴ made for "tube" railways, in comparison with "shallow" railways of the type of the Metropolitan and Metropolitan District Railways, was based upon:—(1) economy in the cost of construction; (2) avoidance of interference with street traffic, sewers and pipes during construction, and consequent disturbance of trade; (3) avoidance of damage to adjoining properties; (4) a supposed superiority in point of ventilation.

(1) Experience has, however, proved that the cost of "tube" railways, including the cost of the shafts and lifts, approximates to the cost of "shallow" railways under similar conditions of location. We refer to the comparative tables of cost of various lines given by the Advisory Board of Engineers. It will be seen that much of the cost of the more modern "shallow" railways has been due to the necessity of placing stations on private property, in order that they might be open to the air, on account of their being up to this date worked by steam locomotives. In the case of future "shallow" railways, which, of course, will be worked by electricity, there can be no objection to the stations being placed under the streets, and a very large reduction in cost both of property and works would result. We see examples of stations of this description on the Chemin de fer Métropolitain de Paris, and older examples exist in the case of the stations under Euston Road on the original Metropolitan Railway of London, which, though objectionable when worked by steam, will fulfil all public requirements when worked by electricity. Apart from this consideration, it has been proved before us that

Relative cost.

¹ Mr. R. W. Perks, M.P., Q. 19555, Vol. II.

² See First Report of Boston Rapid Transit Commission (1895), "The Merits of a Subway," p. 10.

³ Mr. Fitzmaurice, Qq. 6487, 6488. Sir D. Fox, Q. 14024.—Vol. II. Mr. F. Fox, Q. 18365, Vol. II; and Plates LXXIV a, b, c, Vol. VI.

⁴ Mr. Fitzmaurice, Qq. 6491 *et seq.*. Sir D. Fox, Qq. 13929 *et seq.*, 14192. Mr. F. Fox, Qq. 18356 *et seq.*, 18365. Mr. Yerkes, Qq. 20178 *et seq.*, 20191 *et seq.*, 20194.—Vol. II.

the cost of working the lifts is a very serious addition to the working expenses of each "tube" line. It has been calculated, in the case of the Central London Railway¹, to add 8 per cent., or over £8,000² each half year, to the total expenses. This is a continuous expense, and, if it be capitalised, it would, to that extent, neutralise any relative cheapness in construction. These observations as to comparative cost refer to "tube" railways of the type hitherto constructed with lifts and frequent stations.

Interference with traffic during construction.

(2) With respect to non-interference with the traffic of the streets the advantages are distinctly on the side of "tube" railways, though not to the extent which is generally believed. If the comparison were made between the construction of "tubes," and the construction of the original Metropolitan Railway by open cutting in Euston Road, the case would be overwhelming against "shallow" railways; but such is not the present mode of making an underground "shallow" line in large towns. The "Inner Circle" completion was constructed through the heart of the City along the most crowded streets, such as Cannon Street, Eastcheap and the Minories, under temporary wooden platforms³, laid down at night, without any stoppage of the traffic, but involving a slight inconvenience, for a few months, from the wooden platform not being so good a carriage-way as a well paved road. The same mode of construction was adopted through the most crowded streets of Glasgow, and a very large station was constructed without any serious interference with either the ordinary street traffic or a constant service of tramcars. Many other instances could be given, but another well-known example was the construction of the Bank Station in London, which was carried out without any serious interference with the street traffic of perhaps the busiest place in the world. The Metropolitan Railway in Paris is another instance of the adoption of a similar method of building a "shallow" railway under public streets, in full use, with but slight public inconvenience.

It is thus evident that although the construction of "tubes," owing to their great depth in the clay, scarcely affects the traffic of the streets at all, yet the satisfactory construction of a "shallow" railway is really only a matter of the adoption of proper precautionary measures; and it is to be remembered that the cost of such measures is included in the average cost per mile given in the table to which we have referred.

The same remarks apply to any necessary diversions of sewers and pipes. "Tube" railways almost entirely avoid the necessity for those diversions, while, in the case of "shallow" railways, they are frequently necessary; but such diversions are only matters of ordinary engineering, and their cost is included in the average cost per mile in the table. To diversions, as such, of sewers and pipes there is no objection, if properly carried out.

Damage to property.

(3) As to avoidance of damage to property, it is clear that the tubular construction in the London clay has been fairly successful, though such damage has not, in all cases, been avoided. The chief cause of subsidences has been the making of the enlarged tunnels for stations, and the sinking of the shafts for the lifts.⁴ On the other hand, the damage to property occasioned by the making of "shallow" railways has been very small, for precautionary measures against subsidences can be, and were, easily adopted in the case of a railway, which is at a small depth below the road, very frequently not deeper, or much deeper, than the foundations of ordinary buildings. In making the completion of the City Lines of the "Inner Circle" Railway, there was no instance of any damage to buildings directly due to the operations of construction. The sum of £35,000⁵ was spent in underpinning the foundations of buildings and in adopting other precautionary measures, and the cost is again included in the average cost per mile of the railway. The experience in Glasgow was very similar.

¹ Sir Henry Oakley, Q. 18607, Vol. II.

² Mr. Cuninghame, Q. 21796, Vol. II.

³ Sir D. Fox, Q. 13930. Mr. Brereton, Qq. 23646. Mr. F. Fox, Q. 18368.—Vol. II.

⁴ Mr. Morton, Qq. 1933 *et. seq.*, Vol. II.

⁵ Mr. Brereton, Qq. 23637, 23645, Vol. II.

(4) On the subject of ventilation, it was anticipated that no difficulties would arise in the case of "tube" railways.¹ It was hoped that they would ventilate themselves by the shafts, but this did not prove to be the case. In the case of the old "shallow" lines worked by steam locomotives great complaints of bad ventilation were with justice made. Under the conditions of electrical working, the balance of advantage, in the matter of ventilation, must be greatly on the side of "shallow" railways. The objections made in the case of the Metropolitan and Metropolitan District Railways to ventilating² the lines by openings or "blow holes" were based on the annoyance due to the emission of steam and sulphurous fumes. With electrical working, these objections would disappear, and, in the case of any future "shallow" railways, it would be possible to look forward to the possession of a line with abundance of fresh air. *Ventilation.*

Another important matter is, that in a "shallow" railway such as the Metropolitan District Railway, there can be much more space in the tunnels between the trains and the side walls, which is important from several points of view. There is more room at the sides of the trains for escape of passengers from the tunnel in case of accident, as also for platelayers to inspect the railway, which latter duty is impossible, in the case of "tube" railways, while trains are running. Moreover, "shallow" railways are large enough to accommodate the rolling stock of ordinary railways which would facilitate through running from the suburbs where such was practicable. *Available space in the tunnels.*

Again, while lifts are no doubt the best way of meeting the difficulty of "tube" railways being made at depths of 80 to 90 feet below the street, they are not only expensive in working cost, but tend to cripple a "tube" railway, in competition with other means of transit for short distances. However well the lifts may be worked, they cause delay, and are not popular in themselves; they do not even entirely obviate the use of stairs, as they do not always reach the level of the platforms or of the streets. It is, of course, obvious that the lifts are extensively used; but they are a necessity of the situation, and the necessity is, from all points of view, objectionable. *Inconvenience and cost of lifts.*

148. From all the above considerations, it appears to us that, so far as convenience to the public using the railway is concerned, the facilities which "shallow" railways afford, for all descriptions of traffic, are much greater than those which can be given by "tube" railways,³ and that, wherever the "shallow" form of construction can be satisfactorily employed in London, preference should be given to it. For example, if new and widened streets are made, it would certainly be advisable to adopt "shallow" railways beneath them, and, even in the case of streets as they now exist, we think greater attention should be given to the feasibility of "shallow" lines.

We would guard ourselves from being understood as adverse to "tubes": undoubtedly, in certain cases, they may be a necessity, if a railway is to be made at all: they may be preferable, in certain cases, as, for example, where existing "tubes" are to be extended or connected, or where it is desirable not to run along the line of streets, or where considerations of cost are vital, and a "tube" is much cheaper than a "shallow" railway. But we think that, in all future projects for urban railways, the fullest consideration should be given to the many points in which the shallow form of construction offers the greater permanent advantages.

In quitting this branch of our subject, we desire to say that, wherever it is at all practicable, it is most desirable that urban railways, traversing London from side to side, should have four lines of way, in order to provide a separate service for express and for stopping trains, and thus admit, by means of comparatively few interchange stations, of rapid transit to the suburbs from all the stations on the local service lines. This system has been carried out

¹ Mr. F. Fox, Qq. 18396 *et seq.*, Vol. II.

² See Report of Metropolitan Railway (Ventilation of Tunnels) Committee appointed 2nd February, 1897, by the Board of Trade "to inquire into the existing system of ventilation of "tunnels on the Metropolitan Railway, and report whether any, and if so, what steps can be taken "to add to its efficiency in the interest of the public." 1897, Parliamentary Paper, (C. 8684), XLV, 135.

³ See First Report of Boston Rapid Transit Commission (1895), "The Merits of a Subway," p. 10.

lately in New York,¹ and has proved itself to be a great success, being an admirable way of combining transit facilities for urban and suburban traffic.

Possibility of constructing a cheaper type of "tube" railway.

149. The great capital cost of the underground railways now being made is a serious impediment in the way of providing the means of carrying passengers cheaply to and from the central districts by a number of separate routes, which will distribute the population, and especially the working classes, over a wide area. A suggestion has been made by the Advisory Board of Engineers that it may be practicable to construct a cheaper type of "tube" railway, specially suited for long distance traffic, with fewer stopping places, and with the track rising to stations at the surface where the use of lifts would be unnecessary.

The Advisory Board of Engineers say that: "Lines of this class might be comparatively cheaply constructed, beginning at the fringe of the Metropolis on the north, and running through the heart of the City, dipping under the Thames and continuing to the fringe of the Metropolis on the south. There are no such through railways from north to south as the Metropolitan and Metropolitan District lines from east to west. With one station on each outskirt of the City, and a very limited number of intermediate ones between those and the terminal stations, it would be possible to provide the artizan dwellers in the suburbs, the passengers on suburban tramways, and the population generally, with a fast and cheap service of trains. If Parliament and the public bodies co-operated in assisting such undertakings by giving all facilities for their construction, and granting land in public places, suitable for the purpose, for access to stations as is done in Paris, it is reasonably probable that such express lines with few stations might be made on a strictly cash basis, from north to south, or in other directions, at a cost, including equipment, of from £250,000 to £300,000 per mile."

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Board,
p. 113.

If lines of this nature can be constructed at a capital cost on which the traffic carried will give even a moderate return, a great difficulty in connection with the "housing problem" will be removed, but it is obviously impossible to attempt to dispose of the matter by means of a general recommendation.

The questions involved can only be satisfactorily dealt with in connection with proposals for such lines along specified routes, but we regard this suggestion as one of great importance.

Payment for way-leaves under property.

150. There are, also, several ways in which assistance might be given, which would cost the public little or nothing, and yet materially reduce the cost of construction of "tube" railways. In many cases, it is found to be expensive and inexpedient that such lines should follow the line of the streets, and, though way-leaves under property can be obtained, and the actual payments for such easements may not be heavy, the attendant legal and other expenses are considerable. Extravagant claims are not infrequently made, and, in the case of each owner of property under which the line passes, a costly arbitration may be inevitable. No payment is required from the London County Council when a tunnel for main drainage is made under property, except in the case of structural damage, and, if, as has been stated, no appreciable noise or vibration results from the working of electric trains, the same course might be followed in the case of deep-level railways. Way-leaves should be granted for "tubes" on payment for structural damage only. If this course is not followed, we are of opinion that the payments to be made should be, either on a fixed and very moderate scale per yard, or be assessed cheaply and expeditiously by some competent authority, so as to avoid numerous separate and costly arbitrations.

Assistance by the municipal authorities.

We have said elsewhere in our Report that, in our opinion, if undue burdens are not thrown upon railway undertakings, it will not be necessary to give direct assistance to new railways from public sources. But so much importance do we attach to the construction of railways to new

Supra,
par. 145.

¹ See Reports of Rapid Transit Railroad Commissioners of New York City, First Report, 1900-1901; Second Report, 1902; Third Report, 1903.

residential districts that, if private enterprise will not make such railways, we have no hesitation in recommending that the municipal authorities should be empowered to assist: this course was recommended by the Joint Select Committee of 1901, as already explained in paragraph 53 of this Report.

The form in which assistance would be given might vary with the circumstances of the case. The municipal credit might be used to raise the capital cheaply, or the municipal authorities might take shares or find a portion of the capital at a low rate of interest, or arrange for a total or partial remission of local rates; in some cases they could grant space for stations free of charge. A memorandum, dealing with possible methods of granting such assistance, by Sir John Dickson-Poynder, Bart., D.S.O., M.P., will be found in Appendix C, Volume IV.

In any case, we think it would be preferable to use the municipal credit for this purpose, or even to incur direct expenditure, rather than to build houses in the centre of London for the working classes at a cost which leaves a heavy burden on the rates, when every argument, social and economic, is in favour of their removal to the outskirts.

As a means of reducing the burden on underground railways in London of the heavy cost of construction, and of facilitating the provision of means of transport where the same are needed, we are of opinion that the consent of Your Majesty's Commissioners of Works and Public Buildings and Commissioners of Woods and Forests and Land Revenues, might, having regard to the excellence of modern methods of construction, and to the advantages of electricity as a motive power, be given in some cases to the construction of underground railways under Royal Parks and property, or of tramways across or along roads and streets under their control, without substantial interference with the amenities of such parks or property; but that, for the proper preservation of such amenities, any proposal of the nature aforesaid should be referred for special investigation to the Traffic Board referred to in Part III of this Report.

Construction of underground railways, &c., under Parks, &c.

151. If the London County Council gave assistance in the construction of an underground railway, it might be desirable that it should acquire a tract of land for building purposes at the outer extremity of the line, prepare a building plan for it, and let it on lease for building purposes. A portion of the expenditure might be recovered in this way.

Acquisition of land for building purposes by the municipal authorities.

(c) Operation of Urban Railways and Tramways in Large Systems.

152. The Select Committee of the House of Lords appointed in 1863, to consider the question of "Metropolitan Railway Communication," recommended that every system of internal railway communication for the Metropolis should be under one management for working purposes, and this recommendation appears to us to carry not less force in the present day than it did at the time it was made. All large systems of mechanical traction can be worked most economically, and with the greatest advantage to the public, when they are under one and the same management.

Amalgamation for working purposes.

It is only by extensive amalgamations that the great advantages arising from unity of interest and unity of management can be fully realised.

We believe that amalgamation can be carried out in such a way as to be profitable to the shareholders, and advantageous to the public, but we think that it should only be sanctioned on terms and conditions which fully secure the interests of the public.

This is, however, a matter which can only be suggested for future consideration, and to which effect could only be given on the initiative of the railway undertakings concerned.

153. In this connection our attention has been called, on behalf of the London County Council,¹ to the controlling power which has been secured by the Underground Electric Railways Company of London, Limited, over the Baker Street and Waterloo Railway, the Charing Cross, Euston and Hampstead Railway, the Brompton and Piccadilly Circus Railway, and the Great Northern and Strand Railway, the two latter having been amalgamated into

The Underground Electric Railways Company of London, Limited.

¹ Mr. Haward, Qq. 6611 *et seq.*, Vol. II; and Appendix No. 10, pp. 284, *et seq.*, Vol. III.

the Great Northern, Piccadilly and Brompton Railway. The Underground Electric Railways Company also exercise a powerful influence over the London United Tramways Company and the Metropolitan District Railway Company.

There is a natural tendency on the part of companies owning urban railways or tramways to place their undertakings under the same management, and, as we have said, such unified management is a gain and not a disadvantage. The London Underground Electric Railways Company is not a statutory company, but the enterprises which it now controls or influences were, or are being, constructed under statutory authority, and remain, even when under the control of a limited liability company, such as the Underground Electric Railways Company, subject to all the conditions imposed on them by statute; but it obviously would be of advantage in a matter of so much importance to the general public, that the conditions under which amalgamation, of a more or less complete nature, takes place, should be examined and approved by some public authority. The wider the area covered by what is, or is likely to become, a monopoly, the greater is the necessity for regulations to safeguard the interests of the public. In connection with this matter, Mr. Edgar Speyer, who appeared before us as representing the firm interested in the financial arrangements of these railways, stated¹ that, so far as his interests were concerned, he would have no hesitation in laying the whole case for an amalgamation before Parliament when the proper time came. Mr. Charles T. Yerkes, Chairman of the Underground Electric Railways Company of London, who has also lately succeeded Mr. R. W. Perks, M.P., as Chairman of the Metropolitan District Railway Company, likewise informed us² that he would be prepared to lay the whole scheme for amalgamation before Parliament, and take a decision on the merits. Under these circumstances, we do not think it is necessary that we should say anything further on this subject in the present Report. We are satisfied that the formation of the Underground Electric Railways Company of London has been of material assistance in raising the capital for works which will be of great public benefit.

Evidence of Mr. Edgar Speyer.

Evidence of Mr. Charles T. Yerkes.

(d) Other Questions Connected with London Railways.

Overcrowding of trains.

154. Certain special questions in relation to London railways have been brought to our notice and seem to require comment. Evidence has been given on the question of the overcrowding of trains.

Overcrowding is a very difficult subject to deal with. We have no doubt that the evil exists during the "rush hours" in the case of many of the suburban services. Mr. Gooday gave evidence³ to the effect that a large excess of seating accommodation for the passengers carried, even during the "rush hours," was provided in Great Eastern Railway trains, and he pointed out not only that the overcrowding was occasioned in particular trains by passengers crowding into the front compartments of the trains,⁴ although there might be vacant accommodation in the rear of the train, but also that an increase of the number of trains did not prevent overcrowding in the last trains run before particular hours.⁵

He instanced the case of the train services between Walthamstow and London⁶: nine trains were run between 7.30 a.m. and 8 a.m. with seating accommodation for 7,400 people, and, although only 7,100 passengers travelled within that half-hour, the last two trains were seriously overcrowded.

Mr. Gooday also described the steps being taken by the Great Eastern Railway Company to cope with the evil by building more powerful engines, lengthening platforms and widening carriages.⁷

¹ Mr. Speyer, Q. 24631, Vol. II.

² Mr. Yerkes, Q. 20313, Vol. II.

³ Mr. Gooday, Q. 19125, Vol. II.

⁴ Mr. Gooday, Q. 18564, Vol. II.

⁵ Mr. Gooday, Q. 18560, Vol. II.

⁶ Mr. Gooday, Q. 18560, Vol. II.

⁷ Mr. Gooday, Q. 18564, Vol. II.

Notwithstanding all that may be done in these directions, and all that can be done, it is probably true that the last trains, run during the "rush hours," will always be overcrowded.

The business habits of the community compel large numbers of people to reach the City at particular and invariable hours of the morning, and the personal habits of the average individual render it certain that large numbers will always endeavour to take the very last train available.

We look for the relief of overcrowding to the future adoption of electric traction for suburban trains, and to the increase in the number of trains run, which would probably follow this change in motive power. Trains of uniform, but not excessive, size, run at very short intervals, afford the best way of meeting the evil of overcrowding.

155. We will now refer to the questions raised in regard to the speed of railways.

Mr. Harper put in tables, which will be found in Appendix No. 6 (Tables 44 and 45), pp. 178-9, Volume III, showing that the speed of trains on underground railways varies, from 11·1 miles per hour on the "Inner Circle" Railway, to 22·5 miles per hour on the Waterloo and City Railway. The speed of suburban trains on the surface railways covered by the tables varies, from 15 miles per hour for the Midland Railway trains to Moorgate Street, to 27·1 miles per hour, for certain trains, on the South Eastern and Chatham Railway to London Bridge; these speeds are inclusive of station stops, and consequently depend as much, if not more, on the number of stations at which a train stops, as on its running speed between stations.

Speed on London railways.

No doubt the best and most convenient system for a suburban train service is to have a series of expresses in addition to stopping trains.

Express services.

But this system of train working, not only requires duplicate running tracks in both directions, but also involves, in the case of steam railways, a large amount of costly train mileage. So long as trains are hauled by steam engines, we do not think that much improvement in the speed of suburban train services can be looked for. When electric traction is adopted, the advantage of quicker acceleration will be secured, and the readier adaptability of electric trains to all varieties of traffic requirements will, we hope enable suburban train services to be greatly improved, and the journey times of trains to be reduced substantially.

156. The question of fares next requires consideration.

The evidence given before us contained a good deal of criticism of the fares charged on London railways. These have been criticised mainly on the ground that there is a great want of uniformity of charge on different railways, and that the fares charged, however legitimate their basis may be, are, in some cases, more than the poorer classes of the community can afford to pay for travelling to their daily work.

Different rates of fare.

Most of the railway companies have three classes of fares: (1) ordinary; (2) cheap or half fares; and (3) workmen's fares.

The ordinary fares, as shown on the table put in by Mr. Harper, Table No. 40 in Appendix No. 6, p. 174, Volume III, vary, for third-class return tickets, from 34d. per mile on the Central London Railway, to 94d.¹ per mile, on the City and South London Railway.

Ordinary fares.

The cheap or half fares charged on most of the railways, for a certain period after the hour when the workmen's fare ceases to be operative, have been a great boon to the travelling public.

Cheap or half fares.

Workmen's fares are charged under statutory obligations, an abstract of which will be found on Table 49, put in by Mr. Harper, in Appendix No. 6, p. 181, Volume III.

Workmen's fares.

The fares charged, which are summarised in Table No. 43 of the same Appendix, p. 178, Volume III, show great variation, ranging from a mileage rate of 16d. on the Great Eastern Railway to 33d. on the City and South London Railway.

157. Sir Henry Oakley² and Mr. Gooday³ gave evidence to the effect that workmen's fares do not pay. Sir Henry Oakley said that it was

Workmen's fares alleged to be unremunerative.

¹ I.e., from 8 to 10 a.m.

² Sir H. Oakley, Q. 18606, Vol. II.

³ Mr. Gooday. Qq. 18517, 18528 *et seq.*, Vol. II.

clear beyond question that the trains run on the Central London Railway between 5.0 a.m. and 7.30 a.m. did not pay¹. "Their cost of running," he said, "is the same as the average, and their earnings are materially less than the average."

He said that the receipts from workmen's tickets worked out at 1d.² per passenger, whilst the cost of working amounted to 1'02d.³ per passenger.

Question of a uniform fare.

Mr. R. W. Perks, M.P., said⁴ that the Metropolitan District Railway Company were prepared to charge a uniform rate of 2d. per passenger journey over their whole system, but that they could not take that risk if it were to be accompanied with an obligation to carry workmen at the low workmen's fares now prevailing.

A uniform fare at as low a figure as 2d. per passenger journey, applicable over a system as large as the Metropolitan District Railway system, would be a great public advantage.

With the speeds at which electric trains will be run, the disadvantage of distance is reduced to a minimum, and, if a uniform fare per journey were charged, it would, not only tend to spread the population over a wide area, but would also encourage people to go well out into the country, where land is cheaper, and the surroundings are healthier.

We think that every encouragement should be given to the adoption of a uniform fare of 2d. per journey, up to the limit which could reasonably be covered for that fare, and for distances beyond that limit, uniform fares, possibly on a zone system basis.

Workmen's trains.

158. A subject which was a good deal discussed in evidence relating to fares, and to which we have already referred in paragraph 14 of our Report, was the difficulty of obtaining under the existing law a service of workmen's trains, unless it can be shown that there is an existing traffic to justify the running of those trains⁵: in many cases the trains are required, not to carry existing traffic, but to develop a new district.

Supra, par. 14.

We cannot see our way to recommend that railway companies should be compelled to run trains which, in their judgment and in the judgment of the Railway and Canal Commissioners, who are the tribunal having jurisdiction under the Cheap Trains Act, or other competent tribunal of appeal, would be unremunerative.

46 & 47 Vict., c. 34

But we think that it would be an advantage if local authorities were enabled, as recommended by the Joint Select Committee of 1901, in relation to "the prolongation of railways into districts thinly populated," to make arrangements with railway companies whereby, in consideration of additional trains being put on, guarantees might be given for limited periods for such minimum receipts per train mile run as might be agreed. In the event of difference, the Railway and Canal Commissioners might act as arbitrators. In this way local authorities, in co-operation with the owners of the lands likely to be benefited by the running of the trains, might frequently, at a very small cost, secure the development of building land much more rapidly than can be done without the assistance of such arrangements.

Joint Select Committee on London Underground Railways, 1901, Supra, par. 53

159. It is we think evident that the introduction of electric traction will lead to a great improvement of suburban and urban railway facilities in London; the speed of all trains worked by electricity, especially those which stop at many stations, will show substantial increase over the speed of steam trains. It will, we believe, also be found that electric traction, apart from its other advantages, will enable railway companies to increase the number of trains working in and out of the terminal stations, and thereby add largely to the facilities afforded for suburban traffic.

We hope, therefore, that there may be no great delay before the railway companies serving London adopt electric traction for the working of their suburban train service.

¹ Sir H. Oakley, Q. 18603, Vol. II.

² Sir H. Oakley, Q. 18605, Vol. II.

³ Sir H. Oakley, Q. 18604, Vol. II.

⁴ Mr. R. W. Perks, M.P., Qq. 19773 *et seq.*, Vol. II.

⁵ Mr. Dickinson, Qq. 2435 *et seq.* Mr. A. Willis, Q. 21639.—Vol. II.

RAILWAY PLAN.

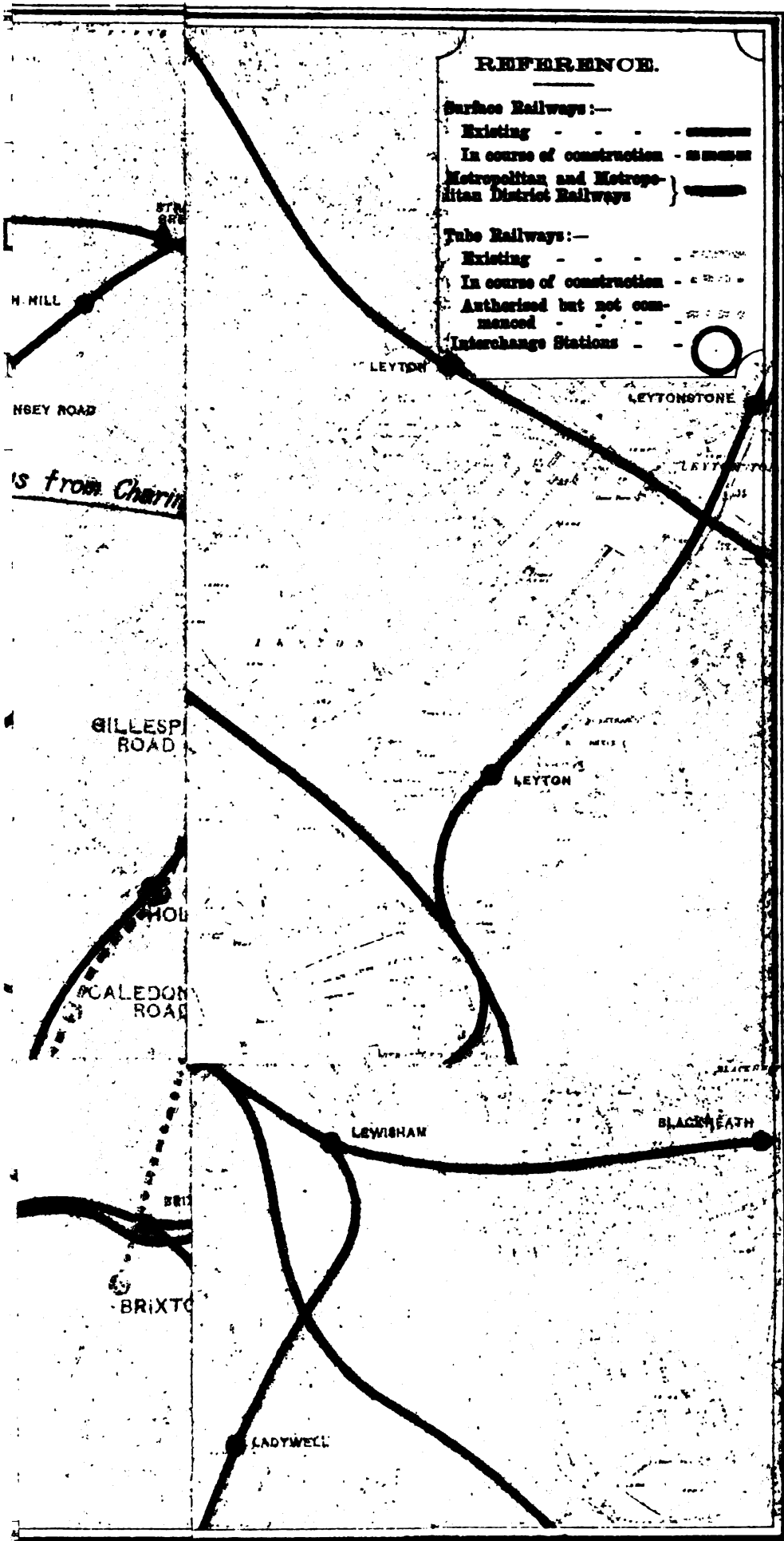
REFERENCE.

Surface Railways:—

- Existing - - - - -
- In course of construction - - - - -
- Metropolitan and Metropolitan District Railways } - - - - -

Tube Railways:—

- Existing - - - - -
- In course of construction - - - - -
- Authorised but not commenced - - - - -
- Interchange Stations - - - - -



To Ongar
G.E.R.

To Southend
Mid & L.T. & S.R.

To Chelmsford

To Blackheath
S.E. & C.R.

To Hither Green
S.E. & C.R.

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1000 Feet
1 Mile

CHAPTER VIII.

RECOMMENDATIONS AS TO ^{STREET} TRAFFIC REGULATIONS AND OTHER MATTERS.*The Law Relating to the Regulation of Traffic.*

160. Before proceeding to consider the question of Traffic Regulations it may be well to enumerate briefly the principal statutory provisions governing the present regulation of traffic in the Metropolitan Police District and the City of London, which constitute separate Police Districts.

General legislation in relation to regulation of traffic.

They are :—

The ¹ Highway Act, 1835, (5 & 6 Will. 4, c. 50) (not applicable to the City—*See* section 115 thereof) secs. 72 & 78 ;

The ¹ Metropolitan Police Act, 1839, (2 & 3 Vict., c. 47), secs. 51, 52 & 54 ;

The Metropolitan Streets Act, 1867, (30 & 31 Vict. c. 134,) secs. 5 to 16; and The City of London Police Act, 1839, (2 & 3 Vict., c. xciv).

In the Highway Act, 1835, as amended by subsequent Acts, ² we find general powers for the prevention of obstruction and encroachment on highways from various causes ; directions as to the rule of the road—that drivers of vehicles or animals of draught or burden shall keep to the left hand side of the road ; and provisions for the maintenance of free passage on highways.

The Metropolitan Police Act, 1839, (section 52 thereof being extended to the City Police by section 24 of the Metropolitan Streets Act, 1867) and the City of London Police Act, 1839, confer upon the Police of the Metropolitan Police District, and the City of London, respectively, general powers for regulating traffic, so as to prevent annoyance during the hours of Divine worship ; for preserving order at the time of public processions, rejoicings and the like, and also in the neighbourhood of Royal Palaces, theatres and other places of public resort ; and give to the Police the power to arrest persons obstructing the public thoroughfares by horse shows, standing carts, driving on footways, furious driving, etc. But the chief powers of the Police, both in the Metropolitan Police District and the City, in regard to the regulation of traffic, are derived from the Metropolitan Streets Act, 1867. The principal feature of that Act is the separation from the “General Limits” prescribed by the Act of a portion, which is known as the “Special Limits,” within which special powers can be exercised by the Police.

The “General Limits” extend over the whole area, within a radius of six miles³ from Charing Cross ; and the “Special Limits” are such streets and places, within the “General Limits,” as shall, from time to time, be so declared by the Commissioners of Police of the Metropolis and the City within their respective districts, with the consent of the Secretary of State for the Home Department.

The intention of the statute was to confer stringent powers on the Police, within the more congested districts in London, and, speaking generally, it enables them to deal with such matters as the removal of ashes and refuse during busy hours, the driving of cattle, the control of obstructive advertisements, the regulation of wheeled traffic, the carriage of timber and goods of unusual size, and the loading and unloading of coal and beer within certain hours.

Experience has shown, as pointed out in the evidence brought before us by police and other witnesses, that the Act is defective in certain particulars ; and it is principally to remedy these defects that the following additional Traffic Regulations are now recommended.

The history of Traffic Regulations is given in a memorandum on the subject by Mr. C. S. Murdoch, C.B., which appears in Appendix F, Vol. IV.

Recommendations : (a)—Standing of Vehicles at the Sides of the Streets.

161. A great hindrance to locomotion is caused by the standing of waggons, vans and other vehicles, at the sides of the streets, for loading and unloading. Colonel Fraser, formerly Commissioner of the City Police, laid

Standing of vehicles, etc. at the sides of the streets.

¹ Short title by the Short Titles Act, 1896.

² The Highway Act, 1835, and the amending Acts are collectively defined as “the Highway Acts, 1835 to 1885,” by and enumerated in, the Short Titles Act, 1896.

³ As so extended by the Metropolitan Streets Act, 1885, (48 Vict., c. 18, sec. 2).

great stress on the inconvenience due to this cause, in his evidence before the Select Committee of the House of Commons in 1866, to which the London (City) Traffic Regulation Bill¹ of that year was referred, and, since that date these evils have certainly not diminished. The law on the subject is contained in Section 54 of the Metropolitan Police Act, 1839, (Sub-section 6) which provides for the infliction of a penalty on "every Person who shall cause any "Cart, public Carriage, Sledge, Truck, or Barrow, with or without Horses, "to stand longer than may be necessary for loading or unloading, or for "taking up or setting down Passengers, except Hackney Carriages standing "for Hire in any Place not forbidden by Law, or who by means of any "Cart, Carriage, Sledge, Truck, or Barrow, or any Horse or other Animal, "shall wilfully interrupt any public Crossing, or wilfully cause any obstruction in any thoroughfare." This provision applies to the whole of "Greater London."² It is obviously out of the question to attempt to prohibit the practice of the standing of vehicles at the sides of the streets, either universally or in particular streets. On the other hand, the standing of vehicles, for this purpose, in crowded, and often narrow streets, either continuously or with only short intervals, seriously impedes locomotion. If there is any doubt about the law, it should be made clear that the use of the streets by frontagers, shall only be such as is reasonable, having regard to the convenient use of the streets for general purposes; for example, where a business is of such a nature that the owner practically converts the street opposite his place of business into a private yard, to the serious inconvenience of the general public, we think he might not unreasonably be required to provide a suitable place [for loading and unloading: in regard to future buildings this should be made compulsory.

cannot be prohibited;

but its abuse might be restricted.

Regulations in regard to the standing of vehicles at the sides of streets for loading and unloading.

By what authorities to be made.

162. As regards existing buildings we are disposed to think that it would be well to give power to some authority to make bye-laws or regulations as to the standing of vehicles at the sides of the streets for loading or unloading or other purposes. It might, for example, be found expedient to prohibit the loading or unloading of vehicles, or of certain classes of vehicles, at particular times in specified streets. We experience, however, some difficulty in deciding upon the authority to whom such powers should be given. We are satisfied that powers of making regulations in the matter might safely be conferred upon the Commissioner of Police of the City, subject to the concurrence of the Court of Mayor and Aldermen, but, if powers of making bye-laws in the matter are given to the different Metropolitan Borough Councils, there is a danger that the rules for adjoining districts might

¹ The Select Committee of the House of Commons to whom the London (City) Traffic Regulation Bill, 1866, was referred;—Report, Minutes of Evidence and Appendix, 1866, Parliamentary Paper, (174), XII, 1.

Q. 385. (Mr. Gathorne Hardy). I will just ask you one further question, which is of a more limited character. You spoke of regulating the hours for the railway vans, and so on; is not there a difficulty in making such a regulation in the City that might not exist in other parts of the Metropolis, from this cause, that, in consequence of the dearness of ground in the City, the railway stations would become choked with the produce brought from the country to them, unless they had a considerable time for carting it and getting it away?—No, I do not think the difficulties would arise at the railway termini. The difficulties are caused by vehicles stopping in the streets and not moving on. The only serious difficulty one has to contend with in the City is from vehicles standing still. So long as you can get vehicles to keep in motion, however slowly, the difficulty is comparatively trifling, except when the whole traffic is impeded at the ends of streets. The Committee might wish to know what the condition of the streets in the City really is; I mean as regards the numbers of streets and the widths of them.

Q. 386. You mentioned, I think, that on one particular day, as long ago as 1860, as many as 50,000 vehicles came into the City?—Yes. I am not now speaking of the number of vehicles. There are in the City altogether 440 streets, of which 101 are really not thoroughfares at all; they are streets and lanes having no exit. There are 111 through which only one line of vehicles can pass. The consequence is that any vehicle, even a wheelbarrow, stopping in one of those streets, in fact, deprives anybody of the power of passing through it. There are 101 through which there is only room for two lines of vehicles to pass; and the consequence of that is, that any vehicle standing still for one minute in any of those streets (and some of them are the busiest of all the streets in the City) interferes altogether with the progress of one line of traffic, and it is therefore necessary to put a policeman there to check it immediately. Of the whole number there are only 70 through which there is room for more than two lines of vehicles to pass at a time for the entire length. I think that shows the necessity of distributing the traffic over a larger number of hours than at present.

Q. 387. And for bye-laws specially relating to those localities?—Yes.

Q. 388. As far as the authority that is to make those bye-laws is concerned, that you think a question of minor importance, as long as they are made?—I think it is of no importance whatever.

² See paragraph 189.

conflict, with resulting inconvenience to those affected by them. On the other hand, if such powers are given to the London County Council to make bye-laws, that body might find it impossible to meet the requirements of the Metropolitan Borough Councils, and the inevitable result would be friction and local opposition. On full consideration of the question, we are of opinion that the best course will be to give to the Commissioner of Metropolitan Police, with the approval of the Secretary of State for the Home Department, and to the Commissioner of Police of the City, with the approval of the Court of Mayor and Aldermen, and subject to the approval of the Secretary of State for the Home Department, power to make regulations as to the waiting of vehicles at the sides of the streets, such regulations, in common with all other bye-laws or regulations relating to traffic, to be examined¹ by the Traffic Board, mentioned in Part III of this Report, which, after conferring with the local and street authorities concerned, should submit recommendations to the Secretary of State for the Home Department, with whom final approval should rest. Every street and local authority should be authorised to submit to the Traffic Board, for consideration, recommendations affecting street traffic, and the Board should inquire into the recommendations, and report upon them to the Secretary of State for the Home Department.

31 & 52
Vict., c. 41,
s. 16. 163. We may mention that, by Section 16 of the Local Government Act, 1888, the London County Council, and, by Section 5 (sub-section 2) of the London Government Act, 1899, the Metropolitan Borough Councils,² are given power, under Section 23 of the Municipal Corporations Act, 1882, to make bye-laws for "the good rule and government" of the areas under their respective jurisdictions; and possibly this power might be held to entitle them to make bye-laws regulating the standing of vehicles at the sides of the streets, but so far it has not been used for this purpose.

62 & 63
Vict., c. 14,
s. 5 (2).
45 & 46
Vict., c. 50,
s. 23.

Power to make bye-laws for the "good rule and government" of London.

(b) *Loading and Unloading of Certain Articles.*

30 & 31 Vict.,
c. 134,
s. 15. 164. The loading and unloading of coal across the footway, and the lowering or drawing up of casks, other than casks containing wine or spirits, by means of ropes, chains, or other machinery passing across the footway, within the "Special Limits," is prohibited by Section 15 of the Metropolitan Streets Act, 1867, within the hours of 10 a.m. and 6 p.m.

Loading and unloading of certain articles across the footway.

This provision of the law does not work satisfactorily. In many districts the hours within which such articles may be loaded or unloaded are not the hours at which the operation can be carried out with least inconvenience to the public.³ For example, in some streets there are more foot passengers before 10 a.m. than after that hour, and consequently the loading and unloading has to be done at a time when the maximum of inconvenience is caused thereby.⁴ Nor does it seem expedient to restrict the rule on this subject to the area known as the "Special Limits."

The requirements of the case would be met if the general power to make regulations regarding the standing of vehicles for loading and unloading which we have recommended to be conferred upon the Commissioners of

¹ This condition as to examination by the Traffic Board would not of course apply to such regulations as may be made by the several Commissioners of Police under the powers conferred upon them by Section 52 of the Metropolitan Police Act, 1839, (extended to the City by section 24 of the Metropolitan Streets Act, 1867). This section is as follows: "It shall be Lawful for the Commissioners of Police from Time to Time, and as Occasion shall Require, to make Regulations for the Route to be observed by all Carts, Carriages, Horses, and Persons, and for preventing Obstruction of the Streets and Thoroughfares within the Metropolitan Police District, in all Times of public Processions, Public Rejoicings, or Illuminations, and also to give Directions to the Constables for Keeping Order and for preventing any Obstruction of the Thoroughfares in the immediate Neighbourhood of Her Majesty's Palaces, and the Public Offices, the High Court of Parliament, the Courts of Law and Equity, the Police Courts, the Theatres, and other Places of Public Resort, and in any Case when the Streets or Thoroughfares may be thronged or may be liable to be obstructed."

² The bye-laws to be in force only within the Metropolitan Borough, and not inconsistent with any bye-laws made by the London County Council.—London Government Act, 1899, Schedule II, Part II.

³ Supt. Cole, Qq. 8204 *et seq.*, 8335. Mr. Scorgie, Qq. 10481, *et seq.* Mr. Barber, Q. 10719. Mr. Edwards, Q. 11909. Hon. J. Scott Montagu, Q. 18923.—Vol. II.

⁴ Mr. Brown, Qq. 8941 *et seq.*, Vol. II; and Appendix No. 14, p. 354, Vol. III. Mr. H. G. Hills, Q. 9214. Mr. F. S. Robinson, Q. 10077. Mr. Blair, Q. 11254. Mr. Behr, Qq. 18307, *et seq.* Mr. Ivey, Qq. 20646, *et seq.*—Vol. II.

The matter can best be dealt with by means of bye-laws or regulations.

Police, is extended, on the same conditions, so as to enable them to deal with methods and times of loading and unloading. If this general recommendation is not accepted, we recommend that the Corporation of the City of London and the Metropolitan Borough Councils be given power to regulate by bye-law the hours at which certain articles may be loaded or unloaded across the pavements in the streets of London. The regulations or bye-laws proposed should be examined by the Traffic Board before being finally dealt with, in the manner before referred to, by the Secretary of State for the Home Department. The hours need not be the same for all streets, nor need the rules apply to all streets, and coke should be included in the list of such articles as well as coal. Coke has been held not to be included under the term "Coal," but clearly ought to be dealt with in the same way as regards the hours or loading and unloading.

Fletcher v. Fields, [1891], 1 Q.B., 790.

(c) Waiting of Private Carriages and Other Vehicles.

Waiting of carriages and other vehicles in the streets.

165. Difficulties are also experienced in connection with the waiting of carriages and other vehicles to take up passengers, or for other purposes,¹ which it would be difficult to meet by means of bye-laws or regulations. The law regarding the standing of carts, public carriages, sledges, trucks and barrows has already been quoted in paragraph 161, but it does not apply to private carriages²; and a private carriage or motor car may cause great inconvenience to the traffic by standing in a crowded street. We find that, in the City of Sydney, N.S.W., a rule³ is in force, which empowers any policeman regulating traffic to require, for reasonable cause, any person in charge of a vehicle or horse to remove it from the place where it is standing, and, either to remove it from the vicinity, or proceed to some adjacent portion of the same street, or to some neighbouring street, indicated by such policeman.

We believe that a similar power is not infrequently exercised at present by policemen in London: we recommend that authority to do so be given by express statutory provision.

(d) Routes for Vehicles.

Prescribing of routes for vehicles.

166. Under Section 11 of the Metropolitan Streets Act, 1867, the Commissioners of Police of the Metropolis and of the City (with the consent of the Court of Mayor and Aldermen) have power, with the approval of the Secretary of State for the Home Department, to prescribe routes for vehicles within the "Special Limits" of the Act, with the proviso that the number of Metropolitan stage coaches that may pass down any street in pursuance of their ordinary trade shall not be limited. This section, which was intended to give valuable powers to the Commissioners of Police for the regulation of all descriptions of vehicular traffic, has been inoperative owing to the ambiguity of its terms.⁴

30 & 31 Vict., c.134 s. 11.

Provisions of the law on the subject inoperative.

It appears to have been held that if one class of vehicles is prohibited from following, or compelled to follow, a particular route, all classes must be treated in precisely the same way. As a consequence, no regulations have been made prescribing the routes of vehicles, except in the City to a very limited extent with regard to omnibuses passing along certain routes, and, to these regulations, the omnibus proprietors concerned gave their consent.

¹ Sir A. C. Bruce, Appendix No. 13. p. 331, Vol. III.

² Sir A. C. Bruce, Q. 7636, Vol. II.

³ Section III, sub-section 8, of Regulations made by His Excellency the Lieutenant-Governor of New South Wales under the Metropolitan Traffic Act, 1900, N.S.W. (See New South Wales Government Gazette, No. 898, 28th Oct. 1901):—

"The driver of a vehicle or the rider of a horse or bicycle upon any public street shall:—

(8). "At the reasonable direction of any member of the Police Force remove his vehicle or horse from where the same is standing, and either remove his vehicle or horse from the vicinity, or proceed to some adjacent portion of such street, or of some neighbouring street indicated by such member of the Police Force."

⁴ Sir A. C. Bruce, Q. 7636. Sir H. Crawford, Q. 24336.—Vol. II.

⁵ Sir A. C. Bruce, Qq. 7477 et seq.; Vol. II.

A Bill to amend the Metropolitan Streets Act, 1867:—1899, Parliamentary Paper, (78), VI, 245.

In 1899, the Secretary of State for the Home Department (Sir Matthew White Ridley) introduced a Bill into Parliament on the subject which did not become law. In this Bill it was provided that the provisions of the law, to which we have referred, should not be confined to the "Special Limits" of the Metropolitan Streets Act, 1867, but should be in force throughout the "General Limits"; and that regulations might be made with respect to all or any classes of vehicles, the exception as regards omnibuses being at the same time withdrawn. Of the changes therein suggested we fully approve, though we are not prepared to say that the "General Limits" of the Act of 1867 are the most suitable for this purpose, or that it may not be desirable to extend those limits either immediately or at some future date.

The provision of the Bill of 1899, on this subject

should be enacted.

Under the existing law, the "General Limits" of the Act of 1867 include all places within a radius of six miles from Charing Cross,¹ and correspond, approximately, with the area of the Administrative County of London, except on the south-east, where a considerable portion of the County of London lies beyond the six miles radius.

167. We attach great importance to the proposed power of regulating routes of vehicles being placed on a proper footing. It will require to be exercised with discretion, but we have no apprehension that, in this country, the power would be used in an oppressive or unreasonable manner; and material mitigation of the existing congestion of traffic in the streets may be anticipated, especially if the prescribing of routes be accompanied by, and combined with, street improvements providing alternative routes. Such improvements, we believe, could, in many instances, be carried out at a comparatively moderate cost.

The matter is one of importance.

Metropolitan Streets Act, 1867, 30 & 31 Vict., c. 134, s. 11.

168. From the provisions of the law which give the Commissioners of Police power to make regulations prescribing routes for vehicles, omnibuses plying for hire are specially exempted.² It is obvious that in prescribing routes for vehicles, the case of omnibuses plying for hire requires special consideration. It would inflict loss on the owners of such omnibuses, and be an inconvenience to the public, if omnibuses were excluded from streets where they had to set down, or were expected to pick up, any considerable number of passengers. On the other hand, there are cases where the routes of such omnibuses might be prescribed, with advantage to the general public who have to use the streets, and, with inappreciable loss to the owners. Omnibuses now form so large a portion of the vehicular traffic in the streets of the Metropolis, and are such a serious cause of congestion, owing to their size and mode of movement, that we are of opinion that some regulation of routes in their case is essential.

Question of omnibuses.

169. We understand that the Commissioner of Police of the Metropolis,³ though not the Commissioner of Police of the City,⁴ entertains objection to any increase of his power to make regulations, on the ground that it is of importance that the police should possess the confidence of the public; and he apprehends that there might be some weakening of that confidence if he made regulations which brought him into conflict with important classes of the community.

Objection of the Commissioner of Police of the Metropolis to the exercise of the power of making regulations.

If the objection of the Commissioner of Police of the Metropolis to the exercise of wider, or indeed of any, powers of regulation of routes is held to be well founded, the alternative would be the grant of the power to make bye-laws, in the matter, to the London County Council. To the grant of such powers to the London County Council, the omnibus proprietors strongly object,⁵ on the ground that the London County Council, in working tramways, have become their trade competitors. As it is desirable to avoid even the appearance of unfair treatment, and to remove all possible grounds of complaint we recommend that, if the London County Council be given a general power to regulate by bye-law the routes of vehicles, omnibuses should be

Objection of the omnibus proprietors to the exercise of similar powers by the London County Council.

¹ As extended by the Metropolitan Streets Act, 1885, (48 Vict., c. 18, s. 2).

² Sir A. C. Bruce, Appendix No. 13, p. 331, Vol. III.

³ Sir A. C. Bruce, Q. 7483, Vol. II.

⁴ Sir H. Crawford, Q. 24361, Vol. II.

⁵ Mr. Pound, Qq. 17679 *et seq.*, Vol. II; and Appendix No. 52, p. 568 *et seq.*, Vol. III.

excepted from their jurisdiction, and that authority to regulate the routes of omnibuses should be given to some independent person or body, such as the Commissioner of Police, or the proposed Traffic Board.

It will be obvious, however, that such a division of authority would be likely to cause inconvenience, since the best results can only be secured by providing that all routes shall be laid down on a comprehensive plan and by a single authority. The Commissioner of Police of the Metropolis is, no doubt, in a different position from the Commissioner of Police of the City, as regulations made by the latter officer must have the concurrence of the Court of Mayor and Aldermen, who, in this way, stand between the Commissioner and the public, but, in our opinion, there is little reason to suppose that the confidence of the public in the impartiality of the police would be affected, if the Commissioner of Police of the Metropolis possessed a general power of regulating the routes of all classes of vehicles. We therefore recommend that authority to do so be conferred upon both Commissioners, subject to the approval of the Secretary of State for the Home Department, and, in the case of the Commissioner of Police of the City, to the consent of the Court of Mayor and Aldermen. Every proposed bye-law or regulation dealing with the subject should, as already recommended in paragraph 162, be examined and reported on by the proposed Traffic Board.

Possible difficulty if our recommendation is carried out.

170. The only real objection which we can see to the course we have just recommended is that, outside the City of London, the London County Council takes the leading part in carrying out street widenings and constructing new streets, and it would be convenient that the same authority should have the power of prescribing routes for vehicles. For example, the London County Council might be willing to provide an alternative route, if it had the power to order that that route should be followed by certain classes of vehicles, but would hesitate to do so if it was uncertain whether the Commissioner of Police would make the necessary regulation, or the Secretary of State for the Home Department give his approval.

Method of overcoming the difficulty.

We think that this difficulty might be avoided by leaving the making of regulations in the hands of the Commissioners of Police, and providing that the London County Council, the Corporation of the City of London, and the Metropolitan Borough Councils should be authorised to suggest to the Commissioners of Police routes for vehicles, which, after examination by the proposed Traffic Board, might be approved or rejected, or approved on conditions, by the Secretary of State for the Home Department. In this way the Secretary of State might give his approval conditionally, and with effect, from the date on which certain street improvements were carried out and completed.

(e) Special Regulation of Omnibus Traffic.

171. In addition to the powers we have already suggested for the regulation of the routes of omnibuses and other vehicles, it would be desirable that definite powers should be conferred, subject to like conditions, on the Commissioners of Police of the Metropolis and of the City of London, to determine the starting places and termini for omnibuses within their respective districts, as well as to make regulations for the preservation of order at such places, and also for limiting the time during which omnibuses shall be allowed to remain at standing or starting places, and for regulating the order of their departure.

The powers which the Commissioners of Police of the Metropolis and of the City already possess under Section 14 of the Metropolitan Streets Act, 1867,¹ of prohibiting the drivers or conductors of omnibuses from taking up and setting down passengers at any place forbidden by regulation of the Commissioners of Police, within the "Special Limits" of the Act, might, we

30 & 31
Vict., c. 134,
s. 14.

¹The Metropolitan Streets Act, 1867, section 14, reads as follows:—"Within the Special Limits of this Act no Driver or Conductor of a Metropolitan Stage Carriage shall take up or set down Passengers at any Place where he may for the time being be prohibited by Regulation of the Commissioner of Police from taking them up or setting them down; and any Driver or Conductor acting in contravention of this Section shall be liable for each Offence to a Penalty not exceeding Forty Shillings."

think, with advantage be extended to the "General Limits" of the Act, with powers to regulate, if necessary, the order of departure of omnibuses from the places indicated in the Commissioners' Regulations.

(f) *Breaking Up of Streets.*

172. The obstruction of traffic caused by the breaking up of the streets in the Administrative County of London by persons who have statutory authority to do so has been strongly pressed on our attention,¹ and the complaints we have received appear to us to be well founded. *Inconvenience caused by the breaking up of the streets.*

The evil has necessarily increased in magnitude in recent years owing to the introduction of telephones, and the increased supply and use of electricity for various purposes.²

A full statement of the companies and authorities who have power to break up the streets will be found in Appendix No. 5, Statement D, p. 98, Vol. III. It will be sufficient to state, in this place, that the list includes: the Metropolitan Water Board; seven Gas Companies; fifteen Electric Lighting Companies; ten Tramway Companies; the Postmaster-General; the National Telephone Company; one Hydraulic Power Company; besides the twenty-eight Metropolitan Borough Councils; the London County Council; and the Corporation of the City of London.

It has been suggested that, in the principal streets, subways should be constructed in which all necessary pipes and wires could be laid.³ Assuming that the subways are of sufficient size, this remedy would prove effective, but the cost of the subways is so great as to prove, in many cases, prohibitive. *Subways for pipes, etc., cannot be generally provided, owing to cost.*

Subways can, with advantage, be constructed, as has been done in the past, when new streets are being made, and old streets widened, or when other favourable opportunities occur, but the remedy is not one that can be applied generally.

173. At present, the rights and obligations of the different companies and persons, who have statutory powers to break up the streets, are not the same in all cases, and the diversity tends to produce confusion and difficulty. *Statutory powers not the same in the case of all companies and persons entitled to break up the streets.*

A Bill dealing with the subject was deposited in Parliament by the Corporation of the City of London in 1902.⁴ The recommendations we have to make on this subject are substantially in agreement with the provisions of that Bill, and are as follows:—

(1) The statutory rights and obligations of the companies and persons, who have authority to break up the streets, should as far as possible be made uniform.

(2) The indiscriminate breaking up of the streets should be prohibited. When any company, or person wishes to break up the streets, notice should be given to the street authority, and by the street authority to all other companies and persons who have similar powers, calling on them to give notice if they wish to break up the streets at the same time. The street authority should then settle the time and the order in which the various operations may be carried out, and should inform the respective Commissioners of Police. This rule would not, however, apply in cases of emergency.

¹ Mr. G. L. Gomme, Qq. 3620, 3627, 3651, 3740, Vol. II; and Appendix No. 5, pp. 67-76, Vol. III. Supt. Cole, Qq. 8301 *et seq.* Supt. Mann, Q. 8535.—Vol. II. Mr. J. H. Brown, Appendix No. 14, p. 355, Vol. III. Mr. J. H. Robinson, Qq. 9511 *et seq.* Vol. II; and Appendix No. 17, pp. 365-6, Vol. III. Mr. Whur, Qq. 10955, 11093, Vol. II; and Appendix No. 26, p. 397, Vol. III. Mr. H. C. Jones, Qq. 11749, 11754, Vol. II. Mr. Edwards, Qq. 11912 *et seq.*, Vol. II. Mr. Emden, Q. 12510, Vol. II; and Appendix No. 35, pp. 429-30, Vol. III. Mr. Hunt, Qq. 12761, *et seq.*, Vol. II; and Appendix No. 36, pp. 433-4, Vol. III. Sir Douglas Fox, Q. 14007, Vol. II. Capt. Nott Bower, Q. 14872, Vol. II; and Appendix No. 45, p. 510, Vol. III. Rt. Hon. Earl Russell, Q. 18039, Vol. II. Mr. Willis, Q. 21336, Vol. II. Mr. Bates, Qq. 22361 *et seq.*, Vol. II; and Appendix No. 69, p. 737, Vol. III.

² Mr. H. E. Jones, Q. 23006, Vol. II; and Appendix No. 70, p. 743-4, Vol. III. Mr. Foulger, Q. 23144, Vol. II; and Appendix No. 71, p. 746, Vol. III. Sir A. B. W. Kennedy, Q. 23266, Vol. II; and Appendix No. 72, p. 756, Vol. III. Mr. Carpenter, Q. 23512, Vol. II. Sir H. Crawford, Qq. 24392, Vol. II; and Appendix No. 79, p. 793, Vol. III.

³ Mr. Gomme, Qq. 3664, 3966, Vol. II.

⁴ Mr. Gomme, Q. 3651, Vol. II; and Appendix No. 5, p. 74, Vol. III. Mr. Morton, Qq. 14394, 14418, Vol. II.

(3) The companies and persons breaking up the streets should be subject to supervision by the street authority, and should be required to obey all reasonable orders of that authority issued with a view to preventing obstruction to traffic.

(4) The street authority should have power to order continuous work, or to limit the hours of working in specified streets.

(5) After conclusion of the operations, no company or person should be entitled, as of right, to break up the street again for some period, such as nine or twelve months, unless in case of emergency, or with the consent of the street authority, which would be given if good cause were shown.

(6) In case of disagreement under (2), (3), (4) or (5), the company or person entitled to break up the streets should be allowed to appeal to the proposed Traffic Board, which should decide the case promptly, after making such inquiry as it might consider necessary. If any company or person broke up the street on a plea of emergency, which was not well founded, they or he should be liable to a penalty under the Summary Jurisdiction Acts.

(7) New service mains should, as far as possible, be laid under the footpath so as to avoid the necessity of breaking up the carriage way when making service connections, and, in the case of new streets, and widened streets, or of the making of new cellars in old streets, the cellars should not be allowed to be constructed in such manner as to impede the laying of service mains under the footpath.

(8) Service connections should be excluded from the operations of these rules, and such connections should be made subject to special regulations.

174. In according sanction to the breaking up of streets, the street authority should have regard to the effect of similar operations which may be carried out at the same time in adjoining districts, and the simultaneous breaking up of parallel streets, which afford alternative routes, should be avoided.

Legislation necessary.

175. To carry out these recommendations, fresh legislation would be required, and advantage should be taken of the opportunity to clear up the misunderstanding, which at present exists, regarding the powers of the Corporation of the City of London, under Section 133¹ of the City of London Sewers Act, 1848. The City Corporation claim,² under that section, to have absolute control over the breaking up of the streets in the City, but this contention is not accepted by all the persons who have statutory authority under special Acts of Parliament to break up the streets.

11 & 12
Vict., c.
clxiii, s. 133.

(g) Use of the Streets by Costermongers and Itinerant Vendors.

Costermongers and itinerant vendors.

176. The obstruction caused by costermongers is dealt with at some length in Sir Alexander Bruce's Memorandum, Appendix No. 13, pp. 329-30, Volume III.

Extent of evil.

It appears that there are about 7,500 costermongers in London, and that 142 streets are used by them, to a greater or less extent, for the purposes of their trade.³

In some instances they cause obstruction, and Sir Alexander Bruce mentions⁴ Farringdon Road, King Street (Hammersmith), London Road and Walworth Road, as places where this is the case. We hold that the streets

¹ City of London Sewers Act, 1848, section 133: "And be it enacted, That no Company or Person shall take up the Pavement or otherwise disturb the Surface of any Street, for the Purpose of laying down, altering, or removing any Pipe, or for any other Purpose whatsoever, without the previous Consent in Writing of the Commissioners, under the hand of the Clerk, every such Consent to state the Name of the Street in which the Pavement is permitted to be taken up, and the Number of Square Feet of Pavement which may be removed or disturbed; and if any Company or Person shall take up or disturb the Pavement or Surface of any Street without previous Consent as aforesaid, or shall take up or disturb a greater Number of Square Feet of Pavement or Surface than shall be permitted by such Consent, every Company or Person so offending shall forfeit and pay the Sum of Forty Shillings for every Square Foot of Pavement which shall be so taken up or disturbed."

² Sir H. Crawford, Qq. 24380 *et seq.*, Vol. II.

³ Sir A. C. Bruce, Q. 7573, Vol. II; and Appendix No. 13, p. 330, Vol. III.

⁴ Sir A. C. Bruce, Q. 7574, Vol. II; and Appendix No. 13, p. 330, Vol. III.

are primarily intended for the convenience of traffic and purposes of locomotion, and that the setting up, of what are practically shops, in the roadway, and the transaction of the business of a shop there, are practices which should only be permitted so long as the through or local traffic in the street is not materially affected.

177. The present provisions of the law, regarding the use of streets by costermongers, hawkers and itinerant vendors generally, are obscure and complex, and appear to us to have originated, to some extent, as the result of accident or oversight.

Under Section 65 of the Act, Chapter xxix. of 1817 (commonly called Michael Angelo Taylor's Act), which was extended to the whole of the Metropolis by the Metropolis Management Amendment Act, 1862,¹ costermongers, if they failed to remove their stalls, goods, carts, barrows, &c., when directed to do so by any person authorised in that behalf by "the commissioners, trustees or other persons having the control of the pavements" in any parochial or other district, to whose discretion the matter was left, could be dealt with, either by prosecution before a Justice, or by seizure of their stalls, goods, carts, barrows, &c., by such commissioners, trustees or other persons, and, for this purpose, it was not necessary to prove either obstruction or annoyance. This provision of the law remained in force for 50 years, but in 1867 the Metropolitan Streets Act, 1867, was passed, Section 6 of which is as follows:—

"No Goods or other Articles shall be allowed to rest on any Footway or other Part of a Street within the general Limits of this Act, or be otherwise allowed to cause Obstruction or Inconvenience to the Passage of the Public, for a longer Time than may be absolutely necessary for loading or unloading such Goods or other Articles."

From the wording of this section, and from statements subsequently made in Parliament by the Secretary of State for the Home Department (Mr. Gathorne Hardy)², it is evident that it was not intended to apply to costermongers, and that it was only meant to refer to shopkeepers or other persons who exposed their wares or goods by placing them in the streets, or left them in the streets for an unnecessary length of time when loading or unloading. It seems, however, to have been recognised that Section 6 of the Metropolitan Streets Act, 1867, prohibited the use of the streets by costermongers, and, in the same year in which this Act was passed, the Metropolitan Streets Act Amendment Act, 1867, was also passed, which provided that the section in question "shall not apply to costermongers, street hawkers, or itinerant traders, so long as they carry on their business in accordance with the regulations from time to time made by the Commissioner of Police³ with the approval of the Secretary of State." Regulations were made by the Commissioner of Police for the Metropolis in 1869 which will be found in Sir Alexander Bruce's Memorandum⁴ already referred to.

178. The result has not been satisfactory; doubts were entertained whether the provisions of Section 65 of Michael Angelo Taylor's Act still remained in force, and the question was raised more than once in the law courts. It was finally decided in the Court of Appeal in 1894 by a majority of the judges (*Keep v. Vestry of St. Mary's, Newington*) that, so long as

Provisions of Michael Angelo Taylor's Act, 1817.

Section 6 of the Metropolitan Streets Act, 1867,

was not intended to apply to the case of costermongers;

but had the effect of prohibiting the use of streets by costermongers.

Subsequent amendment of the Metropolitan Streets Act, 1867.

Unsatisfactory results of this amendment.

¹ By Section 73 of the Metropolis Management Amendment Act, 1862, these powers were transferred to the Vestries and Districts Boards appointed under the Metropolis Management Act, 1855, and from them transferred to their successors, the Metropolitan Borough Councils, by section 4 of the London Government Act, 1899.

² Mr. Gathorne Hardy, on moving for leave to bring in the Bill for the Metropolitan Streets Act Amendment Act, 1867, said in the House of Commons on November 21st, 1867:—"The House is aware that at a very late period of last Session a Bill was passed for regulating the traffic of the metropolis. I am informed that the clause in that Act having reference to persons placing goods on the pavement would, if carried out in strictness, do great injury to a large number of industrious people who earn their livelihood in that manner. I have now to ask leave to bring in an Amendment Bill. It is a very short one; but it contains a clause which provides that the prohibition as to the exposing of goods for sale in the manner I have stated shall not apply to costermongers, street hawkers, and other itinerant hawkers, so long as they carry on their trade in conformity with regulations to be made from time to time by the Commissioners of Police."

³ "Commissioner of Police" is defined by section 3 to include the Commissioner of Police for the Metropolis, and the Commissioner of Police for the City.

⁴ Sir A. C. Bruce, Appendix No. 13, pp. 329-30, Vol. III.

Present state of the law as finally decided in the Courts.

a costermonger carries on his business in accordance with the said regulations, he is not liable to be proceeded against under Section 65 of Michael Angelo Taylor's Act, or under Section 6 of the Metropolitan Streets Act, 1867. If he does not conform to the regulations, he may be proceeded against, either under Michael Angelo Taylor's Act, or under Section 6 of the Metropolitan Streets Act, 1867. On that occasion Lord Justice Lindley made the following remarks:—

"I cannot part with the case without expressing my regret that
"the law on a matter of so much importance to so many persons
"should be in a state of such obscurity and complexity. Both
"costermongers and vestries have much to complain of in the existing
"state of the statute law by which they are governed, and I trust
"that before long Parliament will give the matter the attention
"which it certainly deserves."

Police will not interfere unless there is actual stoppage of traffic.

Difficulties experienced by the Metropolitan Borough Councils.

This decision has left the whole question in a very unsatisfactory position. In view of the obscurity and complexity of the law, and of the difficulties surrounding the question, Sir Alexander Bruce has stated¹ that it has been decided that police action should be confined to cases where there is actual obstruction involving the stoppage of traffic. So long as the traffic can be got through "somehow," costermongers are not interfered with. Nor will the police interfere where the presence of the costermongers merely causes annoyance to the inhabitants. The Metropolitan Borough Councils now deal with this matter,² and some of them have succeeded in clearing certain streets, while others have failed to do so. In any case, the present procedure is tedious and unsatisfactory; causes a waste of time and money; and gives rise to much friction and ill-feeling.

A simpler and more direct procedure necessary.

179. It does not appear to us to be right that questions, regarding the propriety of setting up what are, to all intents and purposes, shops in the crowded streets of the Metropolis, should be left to be decided by a series of actions in the Law Courts between the Metropolitan Borough Councils and individual costermongers, under a law which is, admittedly, obscure and complex. It is perfectly possible that a Metropolitan Borough Council might obtain a conviction against one costermonger, and fail in its action against another, who had his stall in the same street. And there is nothing to prevent a costermonger, against whom a conviction has been obtained, from setting up his stall again, and defending any further prosecution that may be instituted against him. The question that ought to be raised is, not whether a particular costermonger is causing annoyance or obstruction, but whether or not a certain street can or cannot be allowed to be used by costermongers for the purpose of their trade, with reasonable regard to the requirements of the travelling public. In connection with this question a memorial was submitted³ to the Secretary of State for the Home Department in 1899 by the Vestries and District Boards of Works of the Metropolis, but no legislative action appears to have followed.

Memorial of 1899.

Amendment of the law in the direction of restoring its provisions to what they were before 1867.

180. We are of opinion that the change which should now be made ought to be in the direction of restoring the provisions of the law to what they were between 1817 and 1867, but the new provisions need not be so stringent as those formerly in force.

We think that power should be given to the London County Council and the Corporation of the City of London to regulate and prohibit, by bye-laws, the use of the streets by costermongers or itinerant vendors.

All such bye-laws should be considered, and reported on, by the proposed Traffic Board, and would, of course, require approval by the Secretary of State for the Home Department before they took effect.

Home Secretary to have power to sanction bye-laws conditionally.

The Secretary of State for the Home Department should have power to sanction the bye-laws either absolutely or conditionally. Under this procedure, where the removal of the costermongers from any street would inflict hardship on any section of the community, it might be made a condition, either that other and suitable streets should be allowed to be used, or, in case of necessity, that a market should be provided.

¹ Sir A. C. Bruce, Qq. 7571 *et seq.*, Vol. II.

² Mr. Brown, Qq. 8948 *et seq.*, Vol. II.; and Appendix No. 14, p. 355, Vol. III.

³ Sir A. C. Bruce, Qq. 7594 *et seq.*, Vol. II.; and Appendix No. 13, p. 330, Vol. III.

(h) *Special Obstructions to Traffic.*

Plates
XLIXa,
Vol. VI.

181. Our attention has been called to various special obstructions to the free use of the streets, such as the Spitalfields Market,¹ which obstructs Commercial Street, and the Whitechapel Hay Market, which is held in the centre of Whitechapel High Street.

Special obstructions to traffic

Plates
XLIX,
c, d and
Vol. VI.

It would be the duty of the proposed Traffic Board to call attention to all causes of obstruction in the streets, and to suggest appropriate remedies. As regards the two causes of special obstruction to which we have just referred, we are informed that the Spitalfields Market² is now in the possession of the Corporation of the City of London, and that improvements are being made which will remove the grounds for complaint. It appears to us that the Hay Market should be removed from the Whitechapel High Street.

to be dealt with by proposed Traffic Board :

Spitalfields Market ;

Whitechapel Hay Market.

(i) *Maintenance of the Streets.*

182. Representations have been made to us regarding the maintenance of the streets, in respect of which the street authorities have been said to be to blame. The matters concerning which complaints have been received are the making of the slopes unnecessarily steep at the sides of the streets,³ which tends to drive the heavy traffic towards the centre; the excessive watering at the sides of the streets, which has the same effect on heavy traffic⁴; the use of unsuitable material for sanding the streets when rain falls, gravel or pebbles being used in some cases instead of sand⁵; the failure to select in all cases the most suitable material for paving or making the streets⁶; and the placing of rows of lamp-posts or standards down the centres of crowded streets, as well as the placing of public conveniences in places where they unnecessarily interfere with traffic.⁷ If minor complaints of this character were more wide-spread than they appear to be, it might be necessary to give some independent authority the right to interfere in the interests of the through traffic, but, as a rule, we are opposed to any direct interference in these matters with the discretion of the local bodies concerned. It would probably have a good effect if the proposed Traffic Board were to make suggestions in their annual report, to which we subsequently refer, regarding maintenance of the streets.

Maintenance of the streets.

183. We desire, however, to state in the clearest terms, that we consider it of importance, that all fixed obstacles or impediments to free and rapid movement in the streets should be removed where possible. In this way, not merely will the movement of general traffic in the streets be facilitated, but the necessity for expensive street improvements may, in some degree, be obviated or postponed. We are of opinion that no fixed obstacle to traffic in future should be allowed to be placed in any street without the approval of the proposed Traffic Board.

Fixed obstacles or impediments to traffic.

Sanction of proposed Traffic Board necessary in future.

(j) *Subways for Pedestrians.*

184. The construction of subways for pedestrian traffic at crowded or dangerous crossings has been recommended by some witnesses.⁸ We do not think such subways would be so generally used as to justify the requisite expenditure.

Subways for pedestrians.

It seems that the number of persons using the subways at the Bank, other than persons going to or from the stations of the underground railways, is comparatively limited.⁹ The growing congestion of the streets of London, and

¹ Mr. Sellon, Appendix No. 38, p. 464, Vol. III. Sir A. C. Bruce, Qq. 7779 *et seq.*, Vol. II; and Appendix No. 13, p. 335, Vol. III.

² Sir H. Crawford, Q. 24376, Vol. II.

³ Mr. Michaels, Q. 17232, Vol. II.

⁴ Mr. Michaels, Qq. 17227 *et seq.*, Vol. II.

⁵ Mr. Michaels, Q. 17235. Mr. Jeffreys, Qq. 18174, 18176.—Vol. II.

⁶ Sir A. C. Bruce, Q. 7539. Mr. Jeffreys, Q. 18184.—Vol. II.

⁷ Sir A. C. Bruce, Q. 7555. Supt. Bantick, Q. 8126. Rt. Hon. Earl Russell, Q. 17994.—Vol. II. Mr. Jeffreys, Q. 18173, Vol. II; and Plates LXX d and e, Vol. VI. Hon. J. Scott Montagu, Qq. 18946, 18979. Mr. H. E. Jones, Q. 23124. Mr. Carpenter, Q. 23505.—Vol. II.

⁸ Mr. Fitzmaurice, Q. 6430. Supt. Bantick, Qq. 8161, 8162. Supt. Cole, Q. 8312. Mr. Whur, Q. 11025. Mr. H. C. Jones, Q. 11709. Col. Hopkins, Q. 12169. Mr. Russell, Q. 17294. Hon. J. Scott Montagu, Q. 18974. Sir J. Whittaker Ellis, Bart., Q. 23867.—Vol. II.

⁹ Mr. Bates, Appendix No. 69, Tables N, O and P, pp. 734-6, Vol. III.

the probable increase in the number of fast motor vehicles add, however, to the importance of the question, and it may be that the extent, to which the somewhat complicated subways at the Bank are used by persons wishing to cross the streets, is not a true indication of the use that would be made of a subway which provided a direct means of crossing a particular crowded street.

(k) *Cutting Off of Water Supply.*

Cutting off of water supply.

185. We also found that, in some cases when a tenant leaves a house, the water companies were in the habit of cutting off the water supply, restoring it on the incoming of the next tenant¹: this seems to us to involve an unnecessary disturbance of the streets; but we assume that under the Metropolitan Water Board there will not be any such ground of complaint.

(l) *Supervision of the Laying of Pipes, Wires, &c., in the Streets.*

Supervision of the laying of pipes, wires, &c., in the streets.

186. In many of the streets of London so many pipes, wires and public service works have been laid under the surface, that the question of the exercise of supervision by some public authority, over the laying of new pipes, is becoming one of importance. Power should be given to the street authorities to require the owners of dead mains to remove them, if necessary, when laying new ones; and plans should be provided, open to inspection by the public, showing all wires, pipes and other such underground works, laid under each street. We recognise that the matters above referred to have already been dealt with, to some extent, and what is now required is the introduction of a definite system dealing, in a complete manner, with the whole subject.

(m) *Cabstands.*

Cabstands in crowded streets.

187. Cabstands in crowded streets are an obvious impediment to the traffic,² but so long as cabs are used, there must be cabstands, and we are of opinion that the Commissioners of Police should periodically review the position of the cab stands, and make such changes as they find desirable and practicable.

(n) *"Crawling" Cabs.*

"Crawling" cabs.

188. The question of the best means of dealing with "crawling" cabs has often been discussed. Cabmen are forbidden to ply for hire elsewhere than at an appointed cabstand, or to cause obstruction by loitering; but it is difficult to discriminate between the cabman, who has put down a fare and is returning to the stand at a walk, and the cabman who intentionally takes his empty cab along a crowded street with the object of securing a fare. Moreover, at certain times and in certain districts, the number of cabstands is insufficient³ for the accommodation of all the cabs required by the public, and it is often a convenience to members of the public to be able to secure a cab elsewhere than at a cabstand. We understand, from the evidence⁴ laid before us, that the police have tried, in some cases, to induce the cabmen to arrange among themselves, that empty cabs in certain streets shall be driven at a trot, and apparently not altogether without success. Although some difficulty is experienced in enforcing the existing law, we do not see our way at the present time to recommend any alteration.

London Hackney Carriages Act, 1843, 6 & 7 Vict. c. 86, s. 33.

(o) *Slow Traffic Keeping to the Kerb.*

Vehicles proceeding at a walking pace to keep to the kerb.

189. We are also of opinion that all vehicles proceeding at a slow or walking pace should, in the absence of reasonable grounds to the contrary, be required to keep as close as practicable to the kerb. If the rule of keeping the

¹ Mr. N. Scorgie, Qq. 10437 *et seq.*, Vol. II.

² Sir R. Hunter, Qq. 21210 *et seq.*, Vol. II.

³ Sir A. C. Bruce, Appendix No. 13, p. 332, Vol. III. Supt. Francis, Qq. 15123 *et seq.*, Vol. II.

⁴ Sir A. C. Bruce, Q. 7907. Supt. Bantick, Q. 8104.—Vol. II.

⁵ Short title by the Short Titles Act, 1896.

slow traffic to the kerb could be generally enforced, it would materially relieve congestion in the streets, by tending to separate the slow and fast traffic, but, owing to the number of vehicles standing at the sides of the streets, it cannot be strictly enforced, and the satisfactory working of the rule will depend on the discretion exercised by the police in enforcing it. We were informed by Mr. Francis, Executive Superintendent of the City of London Police,¹ that this rule is already enforced with great advantage by the City Police where practicable, and that this is done under the authority given by the City of London Police Act, 1839, section 35, sub-section (6). On the other hand Sir Alexander Bruce, Assistant Commissioner of Metropolitan Police, has stated² that the Metropolitan Police have practically no power to compel heavy traffic to keep to any part of the road.

Difference of opinion as to the law on the subject.

2 & 3 Vict.,
c. xciv.

2 & 3 Vict.,
c. 47, s. 54
(6).

2 & 3 Vict.,
c. xciv, s.
35 (6).

We observe, however, that the powers conferred on the Metropolitan Police by section 54, sub-section (6)³ of the Metropolitan Police Act, 1839, are in terms precisely the same as those possessed by the City Police under the City of London Police Act, 1839; and that two notices have been issued and published by the Commissioner of Police of the Metropolis dated August, 1898, and 19th March, 1901, respectively, stating that instructions had been given to the police to direct all carmen and drivers of heavy vehicles, to keep to the near side as much as possible, and all carmen, and drivers of vehicles, moving at a slow or walking pace to keep as close as possible to the kerb on the near side. It appears probable that the Commissioner of Metropolitan Police apprehended that a conviction for disobedience of these orders could not be obtained before a Metropolitan Magistrate.

We also understand that the question of a bye-law dealing with this subject, made by the London County Council, is under consideration by the Secretary of State for the Home Department.⁴ We have already said that we think a rule of this nature is expedient.

Bye-law now under consideration.

190. The vehicles that proceed at a walking pace through the streets of London include a large number of heavy vehicles transporting materials to and from factories and workshops, situated within, and adjoining, the central area. The concentration of factories and workshops in and around the central area, and their rarity in the suburban districts, are conspicuously shown by the map, which we have had prepared, and which appears as Plate F, Volume V. We are glad to learn that the changes in progress in modern industrial conditions are tending to their removal to less congested districts in the outskirts of London. The provision of cheap electrical power is a most potent factor in the direction of the decentralisation of manufactories, and we think that every facility, both legislative and municipal, should be given to that end. In this way London streets might be relieved of much of the heavy cartage traffic.

Supply of cheap electric power a means of reducing amount of heavy cartage.

Plate F,
Vol. V.

(p) *Position of the Great Markets.*

191. It has been represented to us that the position of the great markets in London seriously affects the traffic question,⁵ as the goods for sale in these markets have to be carried to them for long distances through the Metropolis, and afterwards carried back again for distribution to the retail dealers. Having regard to the repeated failures of attempts

The central markets.

City of London Police Act, 1839, sec. 35, sub-sec. (6).
Metropolitan Police Act, 1839, sec. 54, sub-sec. (6).

¹ Supt. Francis, Qq. 15105 *et seq.*, Vol. II.

² Sir A. C. Bruce, Q. 7453, Vol. II.

³ (6.) (And be it further enacted, that every person who, within the city of London and the liberties thereof, shall commit any of the following offences in any thoroughfare or other public place, shall be liable to a penalty not more than forty shillings for every such offences, that is to say) (every Person shall be liable to a Penalty not more than Forty Shillings who, within the limits of the Metropolitan Police District shall, in any Thoroughfare or public place, commit any of the following offences, (that is to say) :—
“Every Person who shall cause any Cart, public Carriage, Sledge, Truck, or Barrow, with or without Horses, to stand longer than may be necessary for loading or unloading, or for taking up or setting down Passengers, except Hackney Carriages standing for Hire in any Place not forbidden by Law, or who by means of any Cart, Carriage, Sledge, Truck, or Barrow, or any Horse or other Animal, shall wilfully interrupt any public Crossing, or wilfully cause any Obstruction in any Thoroughfare.” “And it shall be lawful for any Constable belonging to the City Police (Metropolitan Police Force), to take into custody, without Warrant, any Person who shall commit any such offence within view of any such Constable.”

⁴ Sir A. C. Bruce, Q. 7996, Vol. II.

⁵ Sir A. C. Bruce, Qq. 7763 *et seq.*, Vol. II; and Appendix No.13, pp. 334–5, Vol. III.

that have been made in the past to remove markets, or alter their position, we do not feel ourselves justified in making any recommendation on the subject.

(q) *Simplification and Consolidation of the Law.*

Simplification and consolidation of the law regulating traffic.

192. We finally recommend that the law, under which traffic in the London streets is regulated, be simplified and consolidated. At present it is scattered over a series of Acts, the provisions of which are, in some cases obscure; in others, they are inapplicable to present conditions; and occasionally they can only be ascertained as the result of one or more expensive and troublesome lawsuits.

The complexity of the numerous Acts governing police action in the regulation of street traffic in the Metropolis is clearly shown in the Memorandum laid before the Commission by Sir Alexander Bruce,¹ from which it will be seen that, in dealing with street traffic, the police, in many instances, have to be guided by powers embodied, not in one or more sections of a single Act of Parliament, but in some four or five statutes, directed towards the same, or nearly the same, object.

To take two examples from the many that might be cited from the list furnished in that Memorandum:—

“Driving to the common danger” is dealt with by no less than six Statutes:—

- ²The London Hackney Carriage Act, 1831, (1 & 2 Will. 4, c. 22);
- ²The Stage Carriages Act, 1832, (2 & 3 Will. 4, c. 120);
- ²The Highway Act, 1835, (5 & 6 Will. 4, c. 50);
- ²The Metropolitan Police Act, 1839, (2 & 3 Vict., c. 47);
- ²The London Hackney Carriages Act, 1843, (6 & 7 Vict., c. 86);
- ²The Motor Car Act, 1903, (3 Ed. 7, c. 36).

“Cattle driving” is dealt with in five Statutes:—

- ²The Metropolitan Police Act, 1839, (2 & 3 Vict., c. 47);
- The Metropolitan Market Act, 1857, (20 & 21 Vict., c. cxxxv);
- The Islington Parish Act, 1857, (20 & 21 Vict., c. xxi);
- The Highway Act, 1864, (27 & 28 Vict., c. 101);
- The Metropolitan Streets Act, 1867, (30 & 31 Vict., c. 134).

It was hoped, at the time of its passing, that the Metropolitan Streets Act, 1867, would do much towards the consolidation and improvement of the powers for regulating the traffic in the Metropolis and City of London. 30 & 31
Vict., c. 134.

But though this Act, and its amending Act³ of the same year were of considerable value, they failed notably in two important respects, 31 Vict., c. 5. as we have already explained, namely:—

- (1) In regard to the obstruction caused by costermongers, and
- (2) In regard to the power to enable effective regulations to be made for controlling the routes of vehicles.

The necessity for the consolidation and simplification of the numerous statutes governing the traffic of London has been rendered more urgent by the rapid increase in two branches of street traffic unknown at the time of the Metropolitan Streets Act, 1867, namely, tramways, horse and electric, and locomotives, heavy and light, which are placed under the control of separate Departments of State.

As illustrative of the present state of things, we may mention that bye-laws relating to general traffic in the streets made by local authorities require to be submitted for confirmation to the Secretary of State for the Home Department;

¹ Sir A. C. Bruce, Appendix No. 13, p. 322, Vol. III.

² Short title by the Short Titles Act, 1896.

³ The Metropolitan Streets Act Amendment Act, 1867, (31 Vict., c. 5).

⁴ Bye-laws relating to the “good rule and government” of the Administrative County of London made by the London County Council under section 23 of the Municipal Corporations Act, 1882, and section 16 of the Local Government Act, 1888, and bye-laws relating to the “good rule and government” of the Metropolitan Boroughs made by the Metropolitan Borough Councils under section 23 of the Municipal Corporations Act, 1882, and section 5 of the London Government Act, 1899.

Bye-laws relating to tramways are subject to the control of the Board of Trade;¹ and

Bye-laws relating to locomotives, heavy and light, are submitted to the Local Government Board.² In the two latter cases the Departments referred to are also empowered to make regulations.

The regulations for governing the Royal Parks are contained in the Schedule to the Parks Regulation Act, 1872, (35 & 36 Vict., c. 15); the Ranger of the Park and Your Majesty's Commissioners of Works and Public Buildings possessing power to make additional regulations. Parks, other than Royal, are regulated under bye-laws made by the London County Council, and approved by the Secretary of State for the Home Department.

The natural consequence of such divided jurisdiction between the various Departments of State enumerated above, who are not bound to confer with each other, or with the Commissioners of Police—the authorities generally responsible for the regulation of London traffic—is that some of the bye-laws overlap, while others are in conflict.

193. A recent instance illustrates the confusion, arising out of the state of things, to which we have just referred. A bye-law was made by a local tramway company, and sanctioned by the Board of Trade, allowing in inclement weather, the carrying of more than the authorised number of passengers in the tramcars, whereupon the tramway company were warned by the police that the bye-law infringed, in the matter of allowing overcrowding, the provisions of the order of the Secretary of State for the Home Department, regulating hackney and stage carriages,³ and that it would be necessary for the police, who were bound to enforce that order, to take proceedings against the tramway company, or their conductor, if they attempted to take advantage of the provisions of the bye-law.

Conflict of jurisdiction in connection with tramways

Another defect arising from this confusion in jurisdiction is shown

and sanitary bye-laws.

¹ Bye-laws made by the local authority under section 46 of the Tramways Act, 1870, in relation to speed, headway, and stopping of tramcars on, and traffic on road used by, tramways. Bye-laws made by the tramway undertakers under the same section, regulating traffic on their tramcars. The Board of Trade are empowered, under the Tramways Act, 1870, and the model clauses in Tramway Provisional Orders and Bills, to make regulations as to use of electrical or other mechanical power and other matters.

² Locomotives other than light locomotives :

Bye-laws made by the council of a county, or of any borough containing, according to the Census of 1881, a population of over 10,000, and the Corporation of the City of London, under Section 6 of the Locomotives Act, 1898, regulating the use of locomotives and waggons on highways in their districts, or prohibiting or restricting within limits the use of locomotives on any specified highways or bridges on the grounds stated.

Light locomotives and motor cars :

The Local Government Board are empowered to make regulations in regard to light locomotives and motor cars (defined by section 1 of the Locomotives on Highways Act, 1896, and section 20 of the Motor Car Act, 1903, to be vehicles propelled by mechanical power under three tons in weight unladen and not used for drawing more than one vehicle).

Under section 6 of the Locomotives on Highways Act, 1896, as to use of light locomotives on highways and construction and condition of user.

Under the Motor Car Act, 1903 :

By section 12 in regard to (1) Increase of weight.

(2) Speed when over two tons in weight, unladen.

" " 7^a " Registration and licensing.

" " 8 " Prohibition on certain highways.

" " 9 " Limiting speed on application of local authority, which, as regards the City of London, is the Court of Mayor and Aldermen, as regards a municipal borough with a population of over 10,000 in 1901, the council of the borough, and, as respects any other area, the county council.

^a Under section 6 of the Locomotives on Highways Acts, 1896.

³ Order made in pursuance of the Metropolitan Public Carriage Act, 1869, (32 & 33 Vict., c. 115), by the Right Honourable Sir Matthew White Ridley, Baronet, one of Her Majesty's Principal Secretaries of State, 18th August 1897.

by the fact that, by a recent Act,¹ the Corporation of the City of London were empowered to make bye-laws as to the hours for collecting dust, but these powers were held to clash with the restrictive clauses on the same subject in the Metropolitan Streets Act, 1867,² and consequently the new statute for the time being is inoperative.

2 Edw. 7,
c. cxvi.
30 & 31
Vict., c. 134.

194. We are of opinion that, in the legislation which we recommend for the simplification and consolidation of the statutes regulating traffic in London, it should be provided that all regulations and bye-laws relating to London traffic by whatsoever authority they may have been framed, should, in the interests of co-ordination, go before the proposed Traffic Board, for examination and report, and especially before final approval, where such is required, by the respective Departments of State (if any) having control over them, whether such Departments be the Board of Trade, the Local Government Board, or the Home Department.

Consolidation of the statutes dealing with the powers and duties of local bodies in the Metropolis.

195. The question of the simplification of the laws regulating traffic is, however, only a portion of the general question of the simplification and consolidation of the statutes relating to local government generally in the Metropolis.

Although this matter, in its wider aspect, may not have special reference to questions of traffic and locomotion, there is no doubt that complexity and obscurity in the statute law are a serious hindrance to efficient administration generally; and we recommend that the statute law affecting the Metropolis should be revised and simplified.

¹ The City of London (Public Health) Act, 1902, (2 Edw. 7, c. cxvi.), section 4:—"Notwithstanding anything contained in any Act of Parliament the inmates and occupiers of any house within the city who do not deposit their house refuse in the ashpit attached to the building of which they are the inmates or occupiers shall deposit such house refuse before eight o'clock in the morning on the kerbstone of the foot pavement in a street and all house refuse deposited in a street in accordance with the provisions of this Act or of the Metropolitan Streets Act 1867 shall be contained in a box barrel or receptacle of a prescribed pattern or patterns. The Corporation may make bye-laws for giving effect to this section."

² The Metropolitan Streets Act, 1867, section 5:—"No Person shall, after the First day of January, One thousand eight hundred and sixty-eight, between the Hours of Ten in the Morning and Seven in the Evening, in such Streets as may be named by the Commissioner of Police, remove any Ashes, Dust or Refuse from any House in any Street." NOTE.—"Commissioner of Police" is defined by section 3 to include both the Commissioner of Police for the Metropolis and the Commissioner of Police for the City of London.

PART III.

TRAFFIC BOARD AND SUMMARY OF CONCLUSIONS.

CHAPTER IX.

TRAFFIC BOARD.

Expediency of Establishing an Authority or Tribunal Possessed of Special Powers in Regard to Traffic Questions.

196. In Part II of our Report we have indicated what measures should be adopted to facilitate locomotion in and around London. We now deal with the second of the questions upon which we are directed by your Majesty to report: "as to the desirability of establishing some authority or "tribunal to which all schemes of Railway or Tramway construction of a "local character should be referred, and the powers which it would be "advisable to confer upon such a body."

197. As we have already shown, the existing defects of the means of locomotion and transport in London are due mainly to the haphazard manner in which questions connected therewith have been treated in the past. The streets were not originally laid out on any general plan, nor were they made of sufficient width. The duty of widening them, and of making new streets outside the limits of the City of London, was neglected for a long time. The question of street improvement began to attract more attention about the middle of the last century, and the establishment of the Metropolitan Board of Works in 1856, and afterwards of the London County Council in 1889, were useful reforms; but no general and systematic improvement of the streets of London has ever been attempted, and the works carried out have not been sufficient to meet the ever-growing wants of the population.

Streets not originally constructed on any regular plan.

No systematic improvement of the streets.

Railways of all classes have been practically left to private promoters, subject to such regulation as could be enforced by the intermittent control of Select Committees of Parliament. The construction and working of street tramways in the County of London has now been mainly undertaken by a single authority, the London County Council, but there is no co-ordination of their system with those in other counties, or with the tramways owned by companies; and the construction of tramways, on an adequate scale, has been impeded by the exercise of the local "veto," while the narrowness of the streets constitutes an obstacle to their extension so as to provide through communication.

Railways left to private enterprise.

Tramway construction impeded.

The construction and maintenance of the main roads leading out of London have never been properly controlled or regulated.

Insufficient provision for main roads leading out of London.

Under such conditions the best results could not be obtained. In the case of railways, the private promoter chose the routes which he thought would pay best, or which the public were disposed to believe would pay best, and to which there would be least opposition on the part of powerful interests. The question of obtaining Parliamentary sanction was reduced to a costly contest, conducted under formal rules, before Select Committees of the Houses of Parliament, in which neither the needs of the whole system of London locomotion, nor the general interests of the travelling public could be sufficiently considered. This mode of procedure in the case of such a city as London is both costly and inefficient: lines are liable to be sanctioned without sufficient consideration of future wants and without any attempt to bring them into harmony with a general and comprehensive scheme of locomotion for London. This want of system has had, in some cases, the unfortunate result of preventing the subsequent carrying out of other and more useful lines.

Procedure by Private Bill in regard to railways.

The existing difficulties are largely due to the non-existence, in the past, of some central authority with jurisdiction over a wide area, endowed with ample powers, and charged with the duty of looking after the interests

Non-existence of a competent municipal authority.

of London. A number of local bodies existed, which were unable to exercise any general, continuous and effective control. The difficulties arising from the want of central control have frequently been experienced in the past, and Committees of the Houses of Parliament, as well as Royal Commissions were appointed to deal with special questions, but action in this direction has been spasmodic, and productive only of partial and temporary improvement, though it has long been recognised that some closer general control of the measures affecting London traffic was required.

Chapter III,
supra.

Expressions of Opinion in the Past.

The Royal Commission on Metropolitan Railway Termini, 1846

198. The Royal Commission of 1846 on Metropolitan Railway Termini recommended that railways should not at any time be allowed within the central area, except in conformity with a uniform plan, approved by Government and sanctioned by Parliament, and they deprecated the surrender of the thoroughfares of the Metropolis, and the property and comfort of its inhabitants, to separate schemes, brought forward at different times, and without reference to each other.

Report 1846, Parliamentary Paper, (719), XVII, 1.

The Select Committee on Metropolitan Communications, 1855.

The Select Committee of the House of Commons of 1855 on Metropolitan Communications said that "until some authority is established in the Metropolis sufficiently comprehensive to give effect to improvements in the communication, laid down on a scale adequate to the existing and prospective wants of the traffic, little can be done by the interposition of the Legislature."

Report, 1855, Parliamentary Paper, (415), X, 1, p. iv.

The Select Committee on Metropolitan Railway Communication, 1863.

The Select Committee of the House of Lords of 1863 on Metropolitan Railway Communication said that all Bills for London railways should be considered by a Select Committee before the Second Reading; that the Board of Trade should make a report at the commencement of each Session on all proposed railways, and works connected with railways, which affected the "Metropolitan Railway District"; that the Metropolitan Board of Works, and the Commissioners of Sewers for the City of London should be allowed to report on all London Railway Bills; and that all such railway Bills should be grouped and referred to the same Select Committee.

Third Report, 1863, Parliamentary Paper, (550 II,) VIII, 9, p. v.

The Joint Select Committee on London Underground Railways, 1901.

The Joint Select Committee of 1901 on London Underground Railways concurred in the view that, in some way, there should be a more direct control and supervision of all projects for underground railways in London, such control and supervision to be exercised, either by some Public Department, such as the Board of Trade, or by a Body of Commissioners, or by a Joint Committee of Members of both Houses of Parliament appointed at the beginning of each Session, to consider all projects affecting traffic in or near London.

Report, 1901, Parliamentary Paper, (279), VI, 397, p. ix.

No adequate remedy applied.

199. Notwithstanding the important expressions of opinion we have just quoted, no adequate remedy for the evil has ever been devised, and no steps have been taken which could be fairly described as more than temporary palliatives. The very magnitude of London, the multiplicity of local authorities and other bodies, the great number of wealthy and powerful sections of the community possessed of conflicting interests and resolute to maintain them, as well as the desire to interfere as little as possible with private enterprise and private property and vested interests, and the heavy cost of street improvements, have all stood in the way of any general reconstruction of those parts of the Metropolis where the existing defects were most serious, and of the carrying out of any general scheme for the improvement of the means of locomotion and transport. No local authority exists, or has ever existed, possessed of such jurisdiction and power as to enable it to deal with locomotion and traffic as a whole. The late Metropolitan Board of Works and the London County Council have both done useful work, but these bodies never possessed sufficient authority, nor dealt with a sufficiently wide area.

Special Difficulties Due to Changing Conditions.

Difficulties due to changing conditions.

200. In the absence of a central body possessed of wide jurisdiction and authority, there existed a fundamental difficulty which could not be overcome

¹ Defined on p. iii. of the Third Report of that Committee to mean the Metropolis.

by the appointment of temporary Royal Commissions or Select Committees of Parliament. It would have been possible, at any particular date, to draw up a general scheme for street improvements, and the provision of facilities for locomotion and transport, and the financial difficulties in the way of carrying it out could have been overcome by legislation providing for assistance from municipal funds; but, even if any such general scheme had been devised, it would probably have been out of date before it was completed, and no permanent body existed which could modify it from time to time, in accordance with the ever-changing conditions of the problem. If such a scheme had been prepared in 1846, the provision for future urban and suburban traffic must, with the information then available, have proved insufficient. A scheme prepared at a later date would have become obsolete as soon as surface tramways and "tube" railways, worked by electricity, became practicable. There is no guarantee that a scheme prepared in the present day would be final: it is practically certain that it would require modification in a very few years. While, therefore, it is necessary that the provision of means of locomotion and transport should be carried out in accordance with a comprehensive plan, it is equally necessary that that plan should be modified from time to time to meet the changing requirements of the population, and make use of the latest scientific inventions. Under these circumstances, the only effective remedy appears to us to be the creation of a permanent authority, possessed of special knowledge and experience, and giving continuous attention to all questions affecting locomotion and transport in London.¹ The present system under which an ineffective control is attempted to be exercised by opposing particular Private Bills in Parliament, and, under which temporary Royal Commissions or Select Committees of Parliament are appointed, from time to time, to deal with special questions of an urgent nature, has failed.

Continuous attention to the problem essential.

A comprehensive plan necessary,

with provision for modification as changing circumstances may require.

A permanent body necessary.

Recommendations :

(a) The Creation of an Authority with Limited and Special Powers.

201. At first sight, it might appear that the general control of measures affecting locomotion and transport in London, as well as power to carry them out, should be given to some existing local authority, or to a local authority to be created for the purpose, but we are satisfied that any such proposal is impracticable under present conditions. It would be impossible to confer the necessary powers, with jurisdiction over the whole of "Greater London," which extends into five adjoining counties, on the London County Council or any other existing local authority or body, and the creation of a new authority, empowered to deal finally with all questions of London locomotion, would involve intolerable interference with the existing local authorities, and give rise to endless friction. As an authority authorised to raise and expend public money, it would necessarily be composed of representatives of the districts included in its jurisdiction, and would consequently be so large as to be unsuited for the direct exercise of executive and administrative functions. For practical purposes, its authority would require to be delegated to a very great extent, except as to matters of great magnitude and importance or involving questions of principle, to a much smaller and specially selected body. For these reasons, it appears impossible to bestow upon any existing authority, or any combination of existing authorities, the power of controlling locomotion and transport and carrying out the necessary works over the entire area of "Greater London." Nor would it be possible to entrust such powers to a new and elected authority, without an interference with existing institutions, so violent as to amount almost to a municipal revolution, and we are unable to recommend the placing of such powers in the hands of any nominated body. That would

Duty cannot be delegated to any existing local or municipal authority ;

or to a representative local authority created for the purpose ;

or to a nominated body.

¹ Sir H. Jekyll, Q. 177. Lieut.-Col. Yorke, Q. 666. Mr. Morton, Q. 1767. Mr. Dickinson, Q. 2189. Sir R. Nicholson, Q. 3077. Mr. Morae, Q. 3250. Mr. H. G. Hills, Q. 9320. Mr. J. H. Robinson, Q. 9518, 9684. Mr. Dixon, Q. 9947. Mr. F. S. Robinson, Q. 10,114. Mr. Harrison, Q. 10228. Mr. Levy, Q. 10655. Mr. Eve, Q. 10912. Mr. Blair, Q. 11197. Mr. Leete, Q. 11358. Col. Hopkins, Q. 12180. Mr. Tyler, Q. 12243. Mr. A. F. Hills, Q. 12320. Ald. Emden, Q. 12551. Mr. Hunt, Q. 12818. Mr. Sellon, Q. 13230, 12352 *et seq.* Sir D. Fox, Q. 13967. Mr. Shadrake, Q. 15266. Mr. Waller, Q. 16138. Mr. Baker, Q. 16322. Mr. Mott, Q. 16476. Mr. Jeffreys, 18098. Mr. Behr, Q. 18232. Sir H. Oakley, Q. 18681. Mr. Humphreys, Q. 18885. Rt. Hon. C. Booth, Q. 19008. Dr. Turner, Q. 19732. Mr. R. W. Perks, M.P., Q. 19869. Mr. Ivey, Q. 20626. Mr. Gavey, Q. 21268. Mr. Willis, Q. 21454. Mr. Bates, Q. 22382. Sir J. Whittaker Ellis, Bart., Q. 23889. Mr. Speyer, Q. 24766. Sir J. C. Robinson, Q. 24883.—Vol. II.

be, in effect, to supersede municipal self-government, and to confer upon an unrepresentative body the right to spend the money of the ratepayers : it would not be tolerated even if it were otherwise desirable.

The new authority must be limited as to its powers and duties.

It seems to follow that the only course remaining is to establish a central body, limited in its powers and duties, so as to avoid interference with the functions of existing local authorities. It is necessary to define clearly the powers and duties which should belong to such central body before determining its constitution.

(b) *The Powers and Duties of the Proposed Traffic Board.*

Yearly report by the proposed Traffic Board.

202. The authority which we recommend to be established should be a Traffic Board, and should discharge definite and practical duties. It should make a yearly report to Parliament on locomotion, transport and traffic in "Greater London," dealing with the whole subject, including such matters as the control of traffic ; the regulation of the statutory powers of breaking up the streets for various purposes ; the removal of any special obstructions to traffic ; the provision of new lines of railway or tramway ; and calling attention to any errors or oversights in the maintenance of streets and roads on the part of local or street authorities. It would also deal with the question of street improvements, including street widenings and the construction of new streets, as well as the provision of alternative routes, and of facilities for dealing with cross traffic. We hereinafter refer to it as "the Board."

Preliminary examination of Private Bills necessary.

203. The most important function of the Board would be the preliminary examination, before consideration by Parliament, of Bills seeking statutory powers for the construction or extension of works affecting the means of locomotion and transport in "Greater London."

The opinion has been very generally expressed before us that Select Committees of Parliament constitute a thoroughly fair and impartial tribunal,¹ but it is urged that Parliamentary procedure is not sufficiently elastic to permit readily of the amendment or consolidation of schemes after they have been embodied in a Bill and laid before Parliament.² The view of a Select Committee is, from the very nature of the case, confined, to a large extent, to the particular scheme before it, and there is little opportunity of considering what the effect of the proposals may be from the point of view of the general requirements of "Greater London." It is also said that there is some want of continuity of policy owing to changes of personnel in the Select Committees that deal with Bills affecting the means of locomotion and transport in London, and that technical questions are often involved which could, with advantage, be dealt with, in the first instance, by a body of experts.³ In short, it is urged, on what appears to us to be good grounds, that every Bill dealing with questions of London locomotion should be examined and reported on by a body of experts possessing special experience, before it is considered by Parliament.

Private Bills should come before the Board in the first instance, which would report for the information of Parliament.

In this view of the matter it appears to us to be desirable that all Bills dealing with schemes requiring statutory authority for the provision of means of conveyance or for street construction or improvement, whether promoted by public bodies or private persons, should come, in the first instance, before the Board, which would examine the scheme, and hold such inquiry, and take such evidence as it might think necessary, and make a report on each Bill to, and for the information of, Parliament. There has been a difference of opinion⁴ among the witnesses who have appeared before us as to whether the Board should make as full and complete an inquiry into each Bill as is made by a Select Committee of Parliament, or whether it should content itself with a more general and less formal inquiry. We think that the best course would be to leave it to the discretion of the Board to make such inquiry as it might think necessary in each case, and, generally speaking, we would leave the Board to regulate its own

The Board to regulate its own procedure in dealing with Bills ;

¹ Mr. Cripps, Q. 15431. Sir R. D. M. Littler, Q. 15845. Sir J. Szlumper, Qq. 21023, 21071.—Vol. II.

² Mr. A. F. Hills, Appendix No. 34, pp. 424, *et seq.*, Vol. III.

³ Mr. Morton, Q. 1987. Mr. Cripps, Q. 15576. Sir R. D. M. Littler, Q. 15943. Mr. Behr, Q. 18232. Mr. Beale, Qq. 20475, 20483, 20494. Mr. Willis, Q. 21516.—Vol. II.

⁴ Cf. Mr. Morton, Q. 1836. Mr. Yerkes, Q. 20216.—Vol. II.

procedure, subject always to such conditions and requirements as Parliament might impose, or Parliamentary procedure might render necessary.

204. The Board would not hold yearly sessions, but, subject to reasonable conditions of holiday, would sit continuously, and Bills that required serious amendment could remain before the Board until the necessary antecedent formalities were completed. The Board would use its discretion as to suggesting amendments and alterations in Bills, or consolidation of separate schemes for the purpose of improving the facilities to be afforded, or in order to bring particular proposals before it into harmony with any general scheme which might be approved for the provision of facilities for locomotion and transport in London. It would be at the option of the promoters of the Bill to accept or reject such suggestions. The Board could also with advantage settle, subject to the approval of Parliament, all clauses for the protection of public or private interests. On completion of their inquiry, the Board would pass on the Bill, with all amendments accepted by the promoters, to Parliament, accompanied by a full report and an expression of its opinion on all points which it considered desirable to notice. The members of the Board, or any of them, or a representative of the Board, might be required to attend before Select Committees of Parliament to explain the grounds of their report or recommendations, and to give advice on any subjects referred to them. The Board would also deal with or report upon any questions which might be referred to them by a Select Committee of Parliament.

and should sit continuously, with reasonable periods of holiday ;

and be empowered to make suggestions for the improvement of Bills ;

and should also settle clauses for the protection of public or private interests.

Board may be required to attend before Committees of the Houses of Parliament ;

and should deal with questions referred to them by Committees of Parliament.

205. If Bills of the nature we have indicated are examined and reported upon by the Board, it would probably be sufficient, in all ordinary cases, if they went before one Joint Select Committee of the two Houses of Parliament, though we think some arrangement would be desirable under which, if thought necessary, any particular Bill could be considered separately by two Committees, as is generally the case at present. We also suggest that, in view of the advantage of preserving a greater continuity of policy, and of facilitating and shortening the process of inquiry, Parliament may think it desirable that the Select Committees dealing with Bills, affecting questions of traffic and locomotion in London, should, as far as practicable, be composed of the same members.

Bills reported on by the Board might ordinarily be submitted to a Joint Select Committee of the two Houses.

206. When the underground railways already sanctioned and under construction have been opened for traffic, it will be easier to decide what further railways or connections between existing railways are required, and along what lines they should be made. If required to do so by Your Majesty's Government, or by a local authority with the approval of Your Majesty's Government, the Board should prepare schemes for works for, or in connection with, the provision of means of locomotion or transport. It might also be required at any time to report specially, and advise, on any question affecting London traffic or locomotion that might be referred to it by your Majesty's Government. In particular, it should be required to consider, and report to the confirming authority on, all bye-laws or regulations for the control of street traffic or the prevention of obstruction in the streets, and to make suggestions for their improvement and modification. If a local authority or other public body wished the Board to make a report on any questions affecting locomotion or traffic within the area under its control, it would be necessary for it to obtain the previous approval of Your Majesty's Government. We recommend that the previous approval of Your Majesty's Government should be required in such cases, in order to obviate any risk of the Board being compelled by the action of a local authority to commit itself beforehand to expressing an opinion on a question which might afterwards come before it in, what may be termed, its judicial capacity. If the report or opinion asked for necessitated the institution of an inquiry, which involved additional expenditure, the authority requiring the report or opinion should pay such additional cost unless the Board were of opinion that the inquiry was necessary in the general interests of London.

Functions of the Board in connection with underground railways and street tramways.

Investigation of certain problems.

Should report on special questions where required to do so by Government.

Should report on bye-laws and regulations.

May report on special questions at the request of a local body with the approval of Government.

The following are examples of other important questions on which the Board might be specially required to report, and, on some of which, we think, it should report :—

Some questions on which the Board might report.

- (1) The improvement of the main roads leading out of London.
- (2) The Building Laws as affecting districts not yet built over within the area of "Greater London."

- (3) The revision and amendment of the laws regulating the breaking up of the streets; and
- (4) The consolidation and amendment of the laws affecting traffic.

207. In cases of a difference of opinion between local authorities regarding their respective contributions to a public improvement or the division of any charge between them, the Board might, on the application of either party, inquire into and determine the matter, and its award should be treated as final and binding, if all parties had agreed beforehand to refer the matter to it. In the same way, the Board might hear and determine all disputes relating to through running, or the interchange of traffic on or between railways and tramways, or as to bye-laws, whether between local authorities or private companies. In addition to arbitral power, it might be advisable to confer upon the Board the duty of determining such matters as Parliament should think fit to assign to it, especially with reference to disputes arising in connection with the construction and working of tramways and railways, after they have been authorised by Act of Parliament.

208. The Select Committee of the House of Lords on Metropolitan Railway Communication in 1863 recommended that every system of railway communication for the Metropolis should be under one management. We attach great importance to this recommendation, and are of opinion that it is equally applicable to the case of tramways. Railways and tramways dealing with urban and suburban traffic should be operated in large systems, under suitable regulations to protect the interests of the public. Competition, in such cases, is seldom effective, and may be wasteful, while the existence of a number of railways and tramways under separate management, both adds to the working expenses, and reduces the facilities for through communication. We are of opinion that the Board would perform a useful service by facilitating and suggesting amalgamation, or joint working, under suitable conditions; and its position as preliminary Examiner of Bills would afford it special facilities for so doing.

Third Report, 1863, Parliamentary Paper, (500 II), VIII, 9, p. v.

Board should facilitate amalgamations for purposes of working.

Services of the Board in connection with the abolition of the tramway "veto."

209. The services of the Board would be valuable in connection with the abolition of the "veto" in the case of tramways, because the existence of such a body would, at any rate, lessen the objection to such a measure on the part of the authorities now possessing the "veto," and would provide a specially qualified, and, we hope, an inexpensive tribunal to consider, in the first instance, the expediency of constructing a tramway through a particular district, or along a particular street, as well as the question of the division of the cost of any necessary widening of the streets, in connection therewith, between the London County Council or other tramway undertaker, and the street authority. Those who now possess the "veto" would of course be entitled to appear before the Board.

(c) Other Duties the Traffic Board May Be Required to Perform.

210. We have indicated, in general terms, the nature of the duties which, we think, the Board could perform, and explained the advantages which might be expected from its establishment, but we would strongly deprecate the idea that the list of duties, we have given, is exhaustive. Experience and further consideration will doubtless show, that other duties may, with advantage, be added to those which we have mentioned, and we think that, if found necessary, the constitution of the Board should be modified from time to time. In proposing a measure which is, in many respects, of a novel character, and which is suggested in view of the exceptional circumstances of London, we feel that it would be most inexpedient to attempt to stereotype its features at the outset. The Board should grow and be developed as further experience, and changing circumstances, may show to be necessary. If, for example, it is decided hereafter to carry out an important urban railway at the cost of London, the Board might be required to undertake such duties in connection therewith as are performed by the Rapid Transit Railroad Commissioners of New York City,¹ or the Rapid Transit Commission

List of duties not exhaustive.

¹ See Appendix A, Vol. IV.

of Boston;¹ or, if at any time found expedient, it could exercise such powers of supervision over the working of railways and tramways as are given to the Boards of State Railroad Commissioners of New York and Massachusetts.¹

211. Witnesses, to whose opinion weight must be attached, have recommended, with more or less qualification, that the decision of the Board on proposals for providing additional means of locomotion and transport in London should be final, and that it should not be necessary for proposals of this nature to be submitted to Parliament in the form of Private Bills.² This view is supported by the Corporation of the City of London.³

Proposal that the decision of the Board should be final.

The establishment of a Traffic Board is, however, a new departure, and, having regard to the general confidence which is felt in Select Committees of Parliament, and the desire which has been expressed in many quarters for the retention of the authority of Parliament as a safeguard and final Court of Appeal,⁴ we are not prepared to recommend that this course should be followed at the present time. Whether, at any future period, the decision of the Board should be considered as sufficient for the carrying out of proposals, which at present require statutory authority, is a matter which can best be decided in the light of future experience. In any case, we hope that a Board, such as we propose, would secure the confidence of the public, and would come, in time, to be regarded by all concerned with such confidence that, in the majority of instances, its conclusions would be generally accepted.

(d) The Constitution of the Traffic Board.

212. It will be seen that the functions of such a Board as we recommend are of an advisory and semi-judicial character, and do not, as outlined for the present, involve the exercise of executive or legislative authority: still less do they involve the power of raising money by taxation in any form. What is required for such purposes, as we contemplate, is a small number of specially-qualified persons, selected solely on the ground of their competence, and holding office for a considerable period, subject always to good behaviour.

Functions of Board should be consultative and advisory.

Our views on this subject will be most conveniently explained by setting out what we consider should be the actual constitution of such a body.

We are of opinion that the Board should consist of a chairman and not more than four nor less than two other members; and we prefer that there should be not more than three members in all, if it is found that they can satisfactorily discharge the duties assigned to them. No member of the Board should engage in any business, or have any interests, which might conflict, or appear to conflict, with the proper discharge of his official duties; nor should he be a member of any local authority in London or have any occupation which would limit the time which he could devote to the work of the Board. As efficiency is indispensable, the members of the Board should be specially selected by Your Majesty's Government, and be paid such salaries as are sufficient to secure thoroughly competent men. It has been suggested that one member should be a lawyer by profession, and another an engineer, but the Board could take legal and expert advice when necessary; and we prefer that the choice of Your Majesty's Government should be unfettered by statutory restrictions. What appears to us to be really essential is that the members of the Board should be capable men of business, energetic, impartial and able to devote, if necessary, their whole time to the work of the Board.

Constitution of Board.

213. It is very desirable that the Board should be in touch, and work in harmony, with the chief municipal authorities of London,

¹ See Appendix A, Vol. IV.

² Mr. Morse, Qq. 3437 *et seq.*, Vol. II. Mr. Sellon, Q. 13795, Vol. II; and Appendix No. 38, pp. 456-8, Vol. III. Mr. Beale, Qq. 20395 *et seq.* Mr. W. Ivey, Q. 20838.—Vol. II.

³ Mr. Morton, Qq. 1836, 1878, Vol. II.

⁴ Sir H. Jekyll, Q. 253. Mr. Waller, Qq. 16105, 16149, 16167. Mr. Pound, Q. 17621.—Vol. II.

and, on that account, we should be glad if it had been practicable for one member of the Board to be nominated by the London County Council and one by the Corporation of the City of London, but this course seems to us inexpedient in view of all the circumstances of the case. It is impossible that all the county and other local authorities of "Greater London" should be represented on the Board, and the objection has been raised that the authorities, who were represented, would be thereby given undue influence, to the prejudice of the other authorities whose interests might be conflicting. We are, therefore, driven to the conclusion that it will be best for all the members of the Board, including the chairman, to be appointed by Your Majesty's Government; and we recommend that this course be followed. The first members of the Board should be named in the Act providing for its constitution and prescribing its functions.

Chairman and members of the Board to be appointed by Government.

The Board should endeavour to reconcile conflicting interests; and facilitate co-operative action; should also be ready to act as arbitrator.

214. The Board should keep in touch with all the local and other authorities in "Greater London," and maintain a friendly attitude towards them and towards all companies and persons that work railways, tramways or other means, for facilitating locomotion and transport, in and around London, using its influence in the direction of conciliation; encouraging and assisting all attempts at co-operative action; and being ready to act as arbitrator in cases of disagreement between the public authorities, companies and other persons above referred to. It should be given such a staff as experience may show to be necessary for the proper discharge of its duties.

The Cost of the Traffic Board.

Mode of meeting the cost of the Board.

215. The cost of the Board, with that of its establishment, must be considerable, but fees could be charged in connection with its duties, though we do not recommend that this should be done to such an extent as to increase the existing burdens on promoters. The cost of the Board, in excess of the fees levied in connection with it, should be levied rateably from the local areas within its jurisdiction.

CHAPTER X.

SUMMARY OF CONCLUSIONS AND GENERAL.

Summary of Conclusions.

216. We do not think it necessary, in conclusion, to repeat all the recommendations contained in our Report, but it may be convenient to present, in a very few words, the general result of our protracted inquiry.

It is imperatively necessary, in the interests of public health and public convenience, and for the prompt transaction of business, as well as to render decent housing possible, that the means of locomotion and transport in London and its adjacent districts, should be improved: they are seriously defective, and the demands and needs of the public are annually increasing.

Improvement of means of locomotion and transport necessary.

The main obstacle to such improvement is the narrowness of the streets, which were not laid out in accordance with any general plan. The arterial roads leading out of London largely suffer from the same defects. A comprehensive plan for the improvement of streets and main roads should be prepared and carried out continuously, as financial considerations will allow. We have suggested some improvements: many more might be suggested, but the difficulty is one of money, and progress must be gradual.

Building Laws and regulations, in regard to width, are required to preserve gardens and forecourts in existing streets, with a view to future widening, so as to ensure a sufficient breadth for new streets, and to make certain that, on property hereafter laid out for building, ample space shall be reserved for through as well as for local traffic.

Increased modern means of locomotion and transport are much needed, both to facilitate movement within the central area, and to facilitate access to and from and within the suburbs for those who work in London and live outside. Electric tramways and railways are necessary for both these purposes; tramways mostly for the former, and railways mostly for the latter, with inter-connection between the two.

The tramways system of London is disconnected and insufficient: it should be largely extended, and the portions of the tramway system that are now isolated should be linked together, through communication being provided from east to west, and from north to south.

Tramways.

We believe that much could be done in tramway development without having recourse, at any rate in the first instance, to great and costly street improvements, but, as such improvements are unavoidable, in any case, the preference should be given to those which will facilitate the extension of the tramway system.

The absolute "veto" over the construction of tramways possessed by local and street authorities should be abolished throughout the area of "Greater London," but with a preferential right to county councils, and the Corporation of the City of London, to construct tramways within their districts, if they are prepared to do so.

Tramways should run through from side to side of London so far as possible, and termini, in the streets and central districts, should be avoided.

In regard to railways, their further development must be governed by the features of the existing and authorised systems, which should be extended and improved: we have suggested various extensions and improvements.

Railways.

It is important that all possible facilities should be afforded to suburban passengers, arriving at the terminal stations, to reach their destinations throughout the central area by railway, either by means of through trains, or by interchange within the stations to which the suburban trains may run.

In the more crowded parts of London, where property is expensive, railways must be placed underground. Railways in shallow subways are preferable to "tube" railways, where the cost is not prohibitive, or where other considerations do not render them impracticable. We desire to draw special attention to the importance that urban railways, traversing London from side to side, on routes where there is a heavy traffic, should have four lines of way, in order to provide a separate service for fast and for stopping trains, and thus admit, by means of a few interchange stations, of rapid transit to the suburbs from all the stations on the local service lines.

Owing to the high capital cost of "tube" railways, constructed under present conditions, there is a difficulty in providing a sufficient number of such railways to distribute population over the outlying districts, but we are advised that it is possible to construct a cheaper type of deep-level railway adapted for suburban traffic, with fewer and less expensive stations, and rising to the surface when the open country is reached: such railways would help to solve the "housing problem" by carrying the population to districts not yet built over.

If private enterprise will not construct the necessary railways, the local authorities might be authorised to give assistance in view of the fact that re-housing within the central area involves a heavy loss to the rates, and that it may be cheaper, and will be better in other respects, to help in making healthier residences in the suburbs accessible. Assistance might be afforded, either by remission of rates, or by direct contribution, according to the precedent of the Light Railways Act, 1896, and the recommendations of the Joint Committee of 1901 on London Underground Railways.

In cases where railways exist, but additional train services are required to open up new districts for building, and railway companies decline, and cannot, under the existing law be compelled, to put on additional trains, local authorities might be empowered, if the necessity is urgent, to guarantee, for a limited period, such net receipts per train mile, for the proposed trains, as may be reasonable.

In cases where a new railway is proposed to be made, which would have the effect of opening out a district for building purposes, we think that a railway company might be authorised to purchase, under proper safeguards, land, likely to be increased in value by the construction of the railway, by means of voluntary agreement with the owner of such land.

Traffic Regulation.

As no practicable improvement of the streets, that can be carried out for many years, will completely remove the congestion of street traffic, special attention should be given to:—

- (1) Improved regulations for traffic.
- (2) The avoidance of certain oversights or defects in the construction and maintenance of the streets; the removal of fixed obstructions from them in certain cases; and the control, in the future, of the erection of such obstructions.
- (3) The introduction of a system for minimising the evils caused by the breaking up of the streets by persons and companies having statutory authority to do so.
- (4) Regulation of the use of the streets by costermongers and itinerant vendors.
- (5) The removal of special obstructions to traffic.

A comprehensive plan for the improvement and construction of main roads leading out of London should be prepared, and arrangements made for carrying out such plan, and for the proper maintenance of the roads when constructed.

Improved building laws are required for application to districts not yet built over, and, possibly, it may be found expedient, in special cases, to prepare "building plans" for particular areas. The law affecting traffic, and prescribing the respective functions and powers of the municipal, local and other authorities in "Greater London," should be simplified and consolidated.

Traffic Board.

A Traffic Board should be appointed with jurisdiction over "Greater London," constituted as explained in Part III of this Report, and authorised and required, to discharge the duties therein set forth.

General.

217. In conclusion we desire to place on record our obligations to those who have assisted us in carrying out a laborious inquiry. To the officers of the various Departments of the State, the Ordnance Survey Department, and the General Register Office, Somerset House, to the London County Council, the Corporation of the City of London, the Metropolitan Borough Councils, and the other Municipal and Local Authorities in "Greater London," as well as to the Police of the Metropolis and the City, our best thanks are due.

We have received valuable assistance, willingly rendered, from the railway, tramway, omnibus, carrying and other companies in London, as well as from the managers of the tramway systems of the Corporations of Liverpool and Manchester, and the Honorary Secretary to the Roads Improvement Association.

A number of eminent engineers and other professional men have given us the benefit of their knowledge and experience, often at considerable inconvenience to themselves; and valuable evidence has been laid before us by persons unconnected, professionally or otherwise, with the business of the provision of the means of locomotion, who took an interest, on public grounds, in the questions with which we had to deal.

The Members of the Commission, who visited the United States, desire to express their appreciation of the courtesy with which they were received by the State and Municipal officials, the officers of the various railroad, railway and tramway companies, and all other persons in that country to whom they applied for assistance; and their appreciation of the extent to which these gentlemen placed their experience at the service of the Commission, and sacrificed their time in furnishing the statistics and other information which were required for the purpose of our inquiry. To the courtesy of the Prefect of the Seine we are indebted for very valuable information regarding the nature, extent and cost of the remodelling of the streets of Paris.

In conclusion we desire specially to represent the ability with which Mr. Lynden Macassey, M.A., B.Sc., LL.D., appointed by Your Majesty to be Secretary to this Commission, discharged the very onerous duties of the office, for which he possessed special qualifications owing to his technical and legal knowledge of all questions connected with the problem of locomotion in London and in foreign cities: this knowledge has greatly facilitated our inquiry. We further desire to acknowledge the valuable services rendered by Mr. Angus Fraser Macrae, M.A., whom he appointed to be Assistant Secretary; by Mr. R. B. Dunwoody, Assoc.M.Inst.C.E., who carried out, to our complete satisfaction, the preparation of the numerous plans and diagrams which we required, as well as by the other members of the staff. The services of the engineering staff, who assisted the Advisory Board of Engineers, have been suitably noticed in the Board's Report.

All which we humbly submit for Your Majesty's consideration.

D. BARBOUR.
COBHAM.
RIBBLESDALE.
JOSEPH C. DIMSDALE.
JOHN DICKSON-POYNDER.
R. T. REID.
J. WOLFE-BARRY.
FRANCIS J. S. HOPWOOD.
GEORGE GIBB.
CHARLES S. MURDOCH.
FELIX O. SCHUSTER.

LYNDEN MACASSEY,
Secretary.

Of the Members of the Commission, Your Majesty was pleased to accept, on March 25th, ult., the resignation of Earl Cawdor, who resigned owing to the pressure of his official duties on his appointment to be First Lord of the Admiralty.

Sir Joseph C. Dimsdale, though he has signed the Report, has stated, in a supplementary report of his own appended hereto, his views on certain subjects, in regard to which he is not in agreement with the majority of the Members of the Commission.

Sir George Gibb has signed the Report subject to the note by him which is appended hereto.

Sir George C. T. Bartley has not signed the Report for the reasons stated in his separate report which is appended hereto.

June 26th, 1905.

R E P O R T

TO THE KING'S MOST EXCELLENT MAJESTY,

BY

THE RIGHT HON. SIR JOSEPH C. DIMSDALE, BART., K.C.V.O., M.P.

MAY IT PLEASE YOUR MAJESTY,

I, the undersigned, one of the Commissioners appointed to inquire into and report upon the means of locomotion and transport in London, humbly submit to Your Majesty the following report :—

One of the Commissioners dissents from some of the conclusions of the majority.

1. I regret that, as the result of the above-mentioned inquiry by Your Majesty's Commissioners, it should be necessary for me to record my dissent from some of the conclusions arrived at by my colleagues.

I have, however, carefully considered their Report, and find myself unable to agree with it in certain important particulars.

2. In carrying out the orders which the Commissioners received from Your Majesty, it has seemed to me my duty to regard the matters referred to the Commissioners, not merely in their more general aspect, but also from those points of view which relate to the unique position and interests of the capital City of the Empire.

Importance of the problem of London locomotion.

3. I concur with the other Commissioners that one of the most important features of the problem of London locomotion is the movement of the population from the suburbs towards the "centre" (or, more correctly speaking, towards the central parts, especially "the City") every morning and back again in the afternoon and evening, so that, in any general examination of the means of locomotion and transport required to meet the wants of the public, the area taken into consideration must include the districts in which persons dwell, who, for the purpose of their work or business, move every day into and out of the central portions of the Metropolis, and must be wider than that contained in the Administrative County of London: this area may be regarded as including the City of London and the Metropolitan Police District, containing 693 square miles, and conveniently spoken of as "Greater London."

Population to be provided for.

4. The population of Greater London in 1901 amounted to 6,581,402; but this figure inadequately represents the number of persons for whom special facilities of locomotion will be required in the future, and the Royal Commission of 1892 on the Water Supply of London estimated that, in 1931, Greater London would contain in round numbers 11 millions of people.

City population.

5. There is undoubtedly a tendency, not confined to the limits of the City, to abandon the central area of London as a place of residence. The night or sleeping population of the City itself appears by the Imperial Census to be 26,923, but the day or occupying population (enumerated by direction of the Court of Common Council) is now estimated to number 359,940.¹

6. The way in which the Imperial Census is taken in the City, is, in my judgment, very misleading. There is a truer analogy between a day census in the City of London and a night census in other towns than there is between a night census in the City and a night census in other towns.

¹ Mr. Bates, Qq. 22,263, 22,265, Vol. II.

Elsewhere than in the City, the night population is, speaking generally, the occupying population; but in the City of London the real occupiers are present in the day and absent at night. This is not the case in any other city or town of the kingdom, and if the same principle were applied to the City as is applied to the rest of the country, a day and not a night census would be the correct method of enumerating the City's population.

7. Whilst the Government plan of "numbering the people" in the City at night practically ignores the most important business population in the world, in other cities and towns of the kingdom the central business population and the surrounding residential population are enumerated together.

8. The magnitude of the population of London and the extent of the area over which it is spread make the problem of locomotion specially important for London as a whole. When, however, the central portions of the Metropolitan area are reached, the difficulties connected with the movement of so large a volume of vehicular and pedestrian traffic are greatly enhanced; and in the City itself those difficulties become extreme, for there the business life and activity of the multitudes who daily throng its thoroughfares are obviously impeded by the congestion and choking of the narrow and tortuous streets, of which there are $48\frac{1}{2}$ miles within an area of 638 acres.¹

Difficulties to be overcome
in the City.

9. It seems, therefore, manifest that the right of "veto" upon the construction of tramways within the City should be preserved, so that aggravation of existing evils from that cause may be capable of prevention by the City authorities. The streets of the City from their narrowness and irregularity being obviously unsuitable for tramways to be placed in them, the carrying capacity of the roadways would be diminished, and the risk of accident both to persons and vehicles would be increased if they were allowed.

"Veto" on tramways.

10. It is only necessary to call attention to the terrible calamity that might result if a breakdown, or other dislocation of tramway traffic, occurred in the City at the time of a fire there, so as to prevent the necessary and rapid action of the Fire Brigade and their engines: in such a case another "Great Fire of London" might ensue.

Danger of fire.

11. When it is remembered that the City contains such important public buildings and institutions as St. Paul's Cathedral, the Bank of England, the Guildhall, the Royal Exchange, the Stock Exchange, the Baltic and other great commercial centres, the Mansion House, the Custom House, the General Post Office, St. Bartholomew's Hospital, as well as the Halls of the City Livery Guilds, and that some 200 banks carry on their business within the City, and, with few exceptions, the chief insurance companies also have their principal offices within its area; and when to all this is added the vast mercantile and financial transactions which are daily carried on within its limits, the stoppage of which would involve incalculable loss to the Empire, surely any proposal relating to traffic by which the danger of a fire in the City might be increased stands at once condemned.

12. The necessity for retaining the right of "vetoing" the introduction of tramways into the City further appears in the evidence given before the Commission by many of the City witnesses, including Aldermen Sir John Whittaker Ellis, Bart., Sir Henry Edmund Knight, Doctor Thomas Boor Crosby, and Mr. Alpheus Cleophas Morton, a member of the Court of Common Council, and for fifteen years a member of the Streets Committee of the Corporation of which he is Chairman, by Captain John William Nott Bower, Commissioner of the City Police, Mr. Deputy William Robert Pryke, also a member of the Court of Common Council, and then Chairman of the Bridge House Estates Committee, Sir Homewood Crawford, the City Solicitor, and Mr. Henry Montague Bates, Principal Clerk in the Public Health Department of the Corporation of London. Upwards of 27,000

Evidence of City.

¹ Mr. Bates, Qq. 22257-8, Vol. II.

vehicles pass in front of the Mansion House in twelve hours, and a surface tramway in the City by the Mansion House crossing from Lombard Street into Queen Victoria Street would stop all the other traffic, and make it impossible to get through the City at all.

The effect of that would be practically to stop the business of the City. With a line of tramways at the Mansion House, it must be obvious that 27,000 odd vehicles could not be moved as is done now.¹ A similar objection is equally applicable to nearly every other part of the City : Mr. Morton was very emphatic upon this point.

13. The evidence of Sir Douglas Fox, to the effect that if a street was pretty wide a tramway improved the condition of the traffic, was dissented from by Mr. Morton, on the ground that even if it were true of other places it would not be so in the City², nor would a surface tramway diminish the congestion there, since not only are many of the streets in the City so narrow that a pair of surface lines could not be put down and leave room between them and the kerb for ordinary traffic, but the immense amount of business done in the City causes, during every week-day, 100,000 vehicles and about one million and a quarter of people to come there on business of various sorts.³

There is also the difficulty of the crossings, some seven different streets converging on the Mansion House alone, the formation therefore of a wider street there would not affect the cross traffic.⁴

In fact, as far as the experience of the Corporation goes, under no conceivable conditions could tramways be worked in the City with the street present traffic, to say nothing of its inevitable increase.⁵

14. The Commissioner of the City Police, who was previously Head Constable of the Liverpool Police, expressed the strongest opinion as to the inadvisability of tramways being introduced into the City : the streets were not wide enough to allow of them ; they were not able to give and take like the other traffic ; tramway lines caused carriages to skid and frequently led to accidents ; when a procession of any kind or public proceeding made it necessary to close the streets, there was no power to divert the tramcars as might be done with other traffic. If the City were dependent on tramway traffic, communication therewith would be absolutely stopped whenever any public function was in progress, because the tramways could not be diverted.

15. Alluding to the evidence given by Mr. Sellon before the Commission, who quoted Liverpool as an example of how much an electric tramway service assisted the traffic, Captain Nott Bower said that his experience of Liverpool was in exact opposition to the statement made by Mr. Sellon. So far from assisting the traffic, he considered that the introduction of the electric tramway system into Liverpool created the greatest possible difficulties with regard to the traffic in almost every street, notwithstanding that the service of Liverpool had every advantage which Mr. Sellon suggested as being necessary for a thoroughly efficient system. There was unified management under the Corporation, there was the electric service on the trolley system ; and yet, notwithstanding all those advantages, the difficulties of traffic were enormously increased by the adoption of the electric tramways in the city. Probably the strongest proof that could be given of how that difficulty was felt, is the view that was taken of it by the tramway authorities themselves, for in Liverpool they recognised this to such an extent that they undertook to pay, out of the tramway profits, for twenty-five extra traffic police in order to deal with the increased complications caused by such traffic. In other words, they subsidised the police force to the extent of £2,500 out of tramway profits. That seems strong proof of the bad effects of an existing service of electric trams in a city where, though the traffic is heavy, it does not compare with that of the City of London, the streets of Liverpool being wider and more easily managed.⁶

Capt. Nott
Bower.

¹ Mr. Morton, Qq. 144001-4403, Vol. II

² Mr. Morton, Q. 14417, Vol. II.

³ Mr. Morton, Qq. 14422, 14423, Vol. II.

⁴ Mr. Morton, Q. 14425, Vol. II.

⁵ Mr. Morton, Q. 14426, Vol. II.

⁶ Capt. Nott Bower, Qq. 14979-14981, Vol. II.

There were not any counterbalancing advantages in the introduction of tramways into Liverpool, so far as traffic was concerned, although they were a great convenience to the travelling public; but even with regard to the persons carried much difficulty arose, because the numbers increased so greatly that whole pavements were blocked with waiting passengers, and the tramcars were greatly overcrowded.

16. Although Captain Nott Bower did not know that he would advocate the doing away with tramways in Liverpool, yet when it came to be a question of adopting a system which he found dislocated the traffic and made things so difficult there, he felt bound to offer the strongest opposition to its introduction in the much more difficult area of the City of London.¹ The City itself is a terminus rather than a place for through traffic: that is to say, by far the larger majority of the travelling public simply go to and return from the City, so that there is scarcely any need for through traffic.

The conditions of traffic there differ in this respect from anything else that we know of.²

17. Assuming that there were tramways outside the central part, and that it would be necessary to continue them into the centre of London, in order that the passengers coming from outside might have a through route to their destination, there would not be much objection to those surface tramways being dipped down into subways, if they did not come to the surface at all in the City; that would practically put them on the same footing as the present "tube" railways.³

18. As regards surface tramways in the City, a specially strong objection in Captain Nott Bower's opinion consists in the liability to a breakdown on the line, and the consequent congestion which might ensue, during the busiest period of the day when traffic in certain of the streets has to be diverted. Surface tramways, and the vehicular traffic and the heavy goods traffic could not get along even in the principal and widest thoroughfares of the City—one or the other must give way. If the tramways are there, then the heavy goods and other vehicular traffic must go by the bye-ways, or continual congestion would result.⁴ It seems obvious, if the heavy goods traffic were eliminated and tramways introduced, a situation worse than the present would be created,⁵ and the trade of the great centre of the world's commerce be most seriously damaged.

19. Sir HOMEWOOD CRAWFORD, the City Solicitor since 1885, in the course of his evidence stated that the Corporation had always successfully resisted the introduction of tramways into the City in what it conceived to be the interest of the public; and in explaining that if tramways were brought into the narrow and crowded streets of the City great difficulties would be created, he called attention to a very recent case in connection with a Bill, which was promoted by the London County Council with regard to a proposed tramway in the neighbourhood of Tottenham Court Road. There the Select Committee laid down practically the same proposition (quoting from a report in "The Times" newspaper), the Chairman (Mr. Compton Rickett, M.P.), saying that "the Committee had had the opportunity of consulting together upon the question of running a tramway along the narrower portion of Tottenham Court Road, where there could not be the statutory width of 9½ feet on either side between the rail and the footway. It was upon this point that the Committee had invited the attendance of a representative of the Home Office that they might know exactly what the objection was. But this Committee had considered it independently of such evidence, and he thought, he was bound to say, at the present stage of the inquiry, that in no circumstances

Sir Homewood
Crawford.

¹ Capt. Nott Bower, Q. 14986, Vol. II.

² Capt. Nott Bower, Qq. 15041–15046, Vol. II.

³ Capt. Nott Bower, Q. 15061, Vol. II.

⁴ Capt. Nott Bower, Qq. 15080–15083, Vol. II.

⁵ Capt. Nott Bower, Q. 15085, Vol. II.

"could the Committee permit the line to be extended at that point where less than the statutory width could be obtained. He did not wish to prejudice the question of the extension of the line if a more convenient spot could be selected for a terminus short of where Tottenham Court Road contracts. It was in the interests of the London County Council to state at once that no amount of argument or evidence would induce the Committee to sanction a tramway in London where the road narrowed to this extent." "Now," said Sir Homewood Crawford, "if you were to apply that to the City you would soon see how utterly impossible it would be to think of the introduction of tramways." He further said he was perfectly convinced that if the opinion of every individual trader in the City were taken, he would say at once that the introduction of tramways would be ruinous to the trade of the City, because of the obstruction which would be caused to traffic generally.¹

20. Asked by Sir John Wolfe-Barry with regard to the passage read from "The Times" as to the decision of the Parliamentary Committee, "do you wish us to consider that the widths mentioned there are ample?" Sir Homewood replied, "No, the way in which I put it is this: that where you have such an expression of opinion from a Parliamentary Committee, as that no amount of argument would induce them to make a recommendation in favour of a tramway in such a narrow street, and apply that to the City, you would find that there would be very little of the City which would not come within the compass of that decision."²

21. Mr. Henry Montague Bates, speaking on behalf of the Corporation, objected to tramways in the City, because of the narrowness of the streets, and the far larger reason that they would seriously interfere with trade, by congesting the traffic.³

Questioned by me as to whether if a tramway came into the City down a comparatively wide thoroughfare, such as St. Paul's Churchyard, it would be impossible for the warehouses to have their vans and necessities for their trade at their doors, and whether it would practically strangle that part of the trade of the City, the witness replied that there was no doubt of it, and that it would apply everywhere in the City more or less, and was one of the primary reasons why the citizens objected to the tramways in the City. As to facilities for coming into the City, given railway facilities, the able-bodied would be quite able to walk a few hundred yards; the City being only one square mile, they would not have far to walk.⁴

22. Before leaving the subject of tramways in relation to the City, it should be noted that the majority of the Commissioners appear to be of opinion that the suburban and long distance urban traffic of London, and especially the important morning and evening traffic, must be mainly provided for by means of railways, as no other means of conveyance will give sufficient speed. Further, that motor omnibuses are likely to come into general use, if they should prove of greater advantage both as reducing congestion in the streets and providing a quicker means of conveyance than the horse omnibus; but in their judgment it does not seem probable that they will supersede electric tramways as a means of conveying large numbers of passengers.

From this last conclusion of my colleagues, I respectfully differ.

23. In Chapter III, para. 24 to 32, of the Commissioners' Report (History of Street Improvements in London) inadequate justice seems to be done to the very great services rendered by the Corporation of London to Metropolitan improvements in general, more than a century ago, when no other municipal body with sufficient power and resources existed. According to the statement of the Corporation laid before the Royal Commission of 1893,⁵ it appears that,

History of Street
Improvements
in London by the
Corporation.

¹ Sir Homewood Crawford, Qq. 24,362-5, Vol. II.

² Sir Homewood Crawford, Qq. 24,368-9, Vol. II.

³ Sir Homewood Crawford, Q. 24,419, Vol. II.

⁴ Mr. Bates, Q. 22,618, Vol. II.

⁵ Mr. Bates, Qq. 22,619, 22,620, 22,621, Vol. II.

⁶ Report of the Royal Commission on Amalgamation of the City and County of London, 1894, Parliamentary Paper [C. 7493], XVII, I.

so far back as the year 1760, the building of the first Blackfriars Bridge was undertaken by the Corporation out of their Coal Dues at a cost of £230,000, and subsequently to that time there had been expended altogether out of the Coal and Wine Duties and other corporate funds in public improvements, works and buildings, upwards of £10,500,000. This great expenditure was for the benefit of London, the Counties of Middlesex, Essex, Kent and Surrey and the City of Westminster, and comprised such important works as the re-erection of the gaol of Newgate, the Clerkenwell Sessions House, a Court House at Westminster, providing site for the General Post Office, forming and improving the approaches to new London Bridge and freeing the bridge from toll, enlarging site of the new Royal Exchange, and improving adjoining streets, formation of Farringdon Street, New Oxford Street, Commercial Road (Whitechapel), Victoria Street, Westminster, Cannon Street, Queen Street, Gracechurch Street, the Holborn Viaduct and the Victoria, Albert and Chelsea Embankments. The Tower Bridge, paid for by money raised on the Bridge House Estates, costing a million and a quarter of money to build¹ and over £16,000 per annum to maintain, without taxing the ratepayers in any way, deserves special notice.

24. The Holborn Valley Improvements, costing over one million and a half, after allowing for "recoupment," were undertaken by the Corporation on the assumption that the Coal Duties would continue, and when they ceased, owing to the action of Parliament, upon July 5th, 1890, the Corporation was left with a debt of over £400,000 to discharge. That amount is being liquidated entirely out of the City's cash, not a farthing being charged on the rates.²

25. Of the above sum of 10½ millions, the Corporation contributed out of its own funds between the years 1792 and 1891 the sum of £908,500 towards Metropolitan improvements, and between the years 1845 and 1861 a sum of £310,000 towards City improvements, making a total of £1,218,500.

26. According to the same statement, in addition to these amounts (but being a part of the above 10½ millions), the Corporation voluntarily consented to apply, and at their own expense obtained an Act of Parliament charging the net proceeds between 1862 and 1890 of their fourpenny Coal Duty (which had been almost from time immemorial their property and applicable at their discretion to corporate purposes) to City improvements of a Metropolitan character, including such important alterations of Metropolitan thoroughfares before referred to as the Holborn Viaduct, Cannon Street, Queen Street and Gracechurch Street, which duty between these years produced £3,100,603; and, consequent upon the abolition of the Coal Duties, they have since contributed £217,881 7s. 5d. towards the liquidation of debt and interest on the Holborn Valley Improvements, there still remaining £387,300 to discharge.³

27. Beyond this a further sum of £186,031 17s. 1d. was voted by the Corporation out of the City's cash in aid of setting back houses and widening streets and thoroughfares (in all some 75 improvements), among them being Farringdon New Street (1839-52) and Mansion House Street (1869).

28. If the sum of £105,806 be added, which was the amount spent by the Corporation in dwellings for the labouring poor from 1864 to 1875 (exclusive of the expenditure of the Commissioners of Sewers on similar objects charged on the rates) it will be seen that the total amounts to not far short of £5,000,000 voluntarily appropriated by the Corporation out of its own corporate funds in relief of rates.

29. In the light of the above facts, it is due to those who have dealt in the past in a practical manner with questions of street improvements in London, to recognise the success that attended their efforts in the works which they actually undertook, notwithstanding the conditions under which

¹ Mr. Pryke, Q. 14699, Vol. II. Mr. Murray, Appendix No. 44, pp. 507-9, Vol. III.

² Mr. Pryke, Qq. 14695, 14702, 14704, Vol. II.

³ Mr. Andrew Murray, Q. 14778, Vol. II; and Appendix, No. 44, pp. 507-9, Vol. VI.

they worked and the difficulties inseparable from want of system generally prevailing throughout the Metropolitan area.

"Housing Problem."

30. In regard to the "Housing Problem As Affected by the Facilities for Locomotion" dealt with in the Commissioners Report (page 9 *et seq.*) it appears to be assumed that the housing schemes of the London County Council for providing workmen's dwellings outside the central districts of London have been self-supporting so far as houses have been built, and that in those cases there has been no loss of money at all.

31. Perhaps the largest of these is that of the Council's housing scheme at White Hart Lane, Tottenham, for accommodating 42,500 persons at an estimated cost of £1,972,602. It will not, I think, be denied that the rents varying from 6s. 6d. to 9s. 9d. per week for the Council's five-roomed tenements at Tottenham do not include rates, which are paid by the tenant in addition to the before-named rents. As the rates even on such tenements are exceedingly high, a workman occupying one of them would appear to be a prosperous man if able to afford something like 10s. 6d. to 13s. 9d. per week for his house accommodation. A six-roomed tenement not belonging to the Council can be obtained at Tottenham for less money than a five-roomed tenement under the Council.

It would appear, therefore, that the most important housing scheme of the London County Council does very little, if anything, towards relieving the overcrowding of the poor class of workpeople in the Metropolis.

32. It should further be noticed, in connection with the Tottenham Housing Scheme, that, at a weekly meeting of the London County Council recently held, one of the most eminent of its members¹ called attention to the deplorable state of affairs connected with the Council's Housing Scheme at White Hart Lane, Tottenham, where he said there was apparently considerable financial loss going on, something like £100,000 having been expended in providing houses of which only 30 to 35 were let. "As a financial speculation the affair was most disastrous. This was only the first instalment of a new scheme on which it was proposed ultimately to expend something like £2,000,000, and the time had arrived when the Council should pause and enquire very carefully whether it was desirable to go on with a scheme which people in the neighbourhood of Tottenham were certain would be a failure."

Appointment of the Advisory Board of Engineers.

33. In the course of the evidence given before the Commissioners a great number of suggestions were put forward by witnesses with a view to improving the streets and relieving congestion. These various projects, involving enormous expenditure, have been considered and reported upon by the Advisory Board of Engineers which we appointed to advise on matters connected with engineering.

The Board recommended (*inter alia*) the construction of two Main Avenues through London, one from west to east to connect Bayswater Road with Whitechapel, and *passing through the City* in the neighbourhood of London Wall, the other from north to south to connect Holloway with the Elephant and Castle, passing by a new bridge across the Thames near the western boundary of the City. Each avenue would be 140 feet wide, with subways. It is also intended that there should be four lines of tramways on the surface, and four lines of railway a few feet below the surface.

34. I consider that the proposal to run a street east and west through the City of London 140 feet in width is one which, if carried out, would be in every way disastrous to the City, as the most crowded emporium resorted to by the multitudes of people who are interested in the world's commerce and finance, of which it is the most busy centre.

35. Besides this objection, which more particularly relates to the City, I agree with my colleagues that it is necessary to dwell upon the enormous outlay that would be involved in these schemes foreshadowed by the Advisory Board. It would seem from the Report of the Board that the east and west

¹ Sir R. M. Beachcroft. Vide "The Times," 24th May, 1905.

avenue, with its subways, railways and tramways, would involve, upon a rough calculation, £15,550,000, and that the north and south avenue would cost about £8,550,000, the two amounts representing £24,100,000 sterling; but, in the opinion of my colleagues, with which I concur, probably the net cost will be considerably higher.

36. My colleagues themselves contemplate the possibility of a sum of 30 millions sterling being required to accomplish the work, and over a million a year for interest and sinking fund of the borrowed money.

37. Even these portentous figures do not represent the whole amount which the proposals of the Advisory Board of Engineers would involve, and to this must be added the damage to the vital interests of the City before mentioned, as well as to many of the most important parts of the Metropolis. It is true it is estimated that "recoupment" to a large extent may be looked for; but, if the whole Metropolis was subject to such an upheaval as is suggested by the Advisory Board, the trade centres and some of the most valuable sites would be so ruined that it is impossible to conceive what the site value of London, as a whole, would be.

38. These proposals of the Advisory Board have been put forward without rebutting evidence being heard, and without all necessary aspects of the important questions involved being debated and sufficiently considered.

39. However valuable the report of the Advisory Board may be, and I fully appreciate its importance and the ability it displays, it is quite possible that engineers of great eminence may have much to say in relation to it before its adoption. I, therefore, venture to say that it would have been better for it to be considered, with no suggestion of bias, by a differently constituted tribunal.

40. The Commissioners were informed by the London County Council Coal Duties. that the charge on the rates for improvements purposes is as high as the ratepayers can bear, and the Council were of opinion that, if they cannot find some new source of revenue, the necessary improvements will be seriously checked. The only new source of revenue recommended by the London County Council is, the taxation of land values (to which I cannot assent) not exceeding 4d. in the £, which they estimate would yield about £250,000 a year. Other witnesses recommended a renewal of the Coal and Wine Duties, which appear by the accounts of the Corporation to have yielded for the half year ending July 5th, 1889, £357,878 9s. 3d., and would, I believe, yield now considerably over £500,000 per annum, being double the expected yield from a new tax on land values. Mr. R. W. Perks, M.P., considered that the revival of the Coal Duties would be the cheapest form of raising money and the best for Metropolitan improvements.¹

41. The Corporation still possess the necessary organisation and means of collecting the ancient Coal Duties, and I strongly advise their revival. This might be done without any injury whatever to the ordinary consumer, and would enable further desirable Metropolitan improvements to go forward without increasing the rates; and probably the present burden upon the ratepayers might even be lessened—in addition to which coal consumers, who have never benefited by the remission of the duties, would gain by their renewal, by reason of the safeguards which would again be brought into existence in connection with the supply of coal and its proper quality.

42. After careful consideration of all the facts and circumstances Conclusion. hereinbefore set forth, I have come to the conclusion that the Commissioners would have been well advised to issue an interim Report, dealing shortly with the difficulties which at present exist and suggesting the formation of an Improvements Advisory Tribunal, before whom could be laid the Report of the Advisory Board of Engineers, with such suggestions or recommendations as might occur to the Commission on further consideration, and which suggestions or recommendations could have been embodied in a final Report.

¹ Mr. R. W. Perks, M.P., Q. 19969, Vol. II.

43. The ratepayers of London are already overburdened. Trade at the present time is anything but buoyant, and they may, with good reason, be alarmed at the prospect of improvements involving so huge an outlay as that contemplated by the Board of Engineers. In my judgment, the good work done by this Commission is in danger of being lost sight of in the justifiable alarm which may be caused by the contemplation of the millions which will have to be expended if the Report of the Advisory Board of Engineers is to have any chance of realisation.

44. I, therefore, respectfully counsel the going by stages. Indeed, I think it might have been the better course simply to have recommended the creation of a properly qualified Improvements Advisory Tribunal; before which could be immediately laid the report we have obtained from the Advisory Board of Engineers, and which Tribunal should be empowered, and would be in a far better position, to deal exhaustively with the whole subject, and before whom independent evidence could be placed.

All which is humbly submitted for Your Majesty's consideration.

JOSEPH C. DIMSDALE.

NOTE BY SIR GEORGE GIBB.

I have signed the Report subject to the following note :—

1. I think that it should be distinctly stated that a railway from Shepherd's Bush *via* Kensington, Piccadilly and the Strand to the City, is required, and that such railway should pass, as near as possible, to Liverpool Street and Broad Street Stations, and should be connected, at either end, with the Central London Railway by end-on junctions, so that trains might be run on a complete circle, *via* the Central London Railway and the proposed new line, thereby increasing the carrying capacity of the Central London Railway, and securing the fullest public benefit from the capital already expended on that undertaking.

If, by arrangement between all companies concerned, portions of the authorised Metropolitan District deep level line, and of the Great Northern, Piccadilly and Brompton Railway west of Cranbourne Street, Piccadilly, could be utilised as part of the new City route, the portion of the Brompton line north of Piccadilly being worked by a "shuttle" service, this would, in my judgment, be a plan which would best serve the public requirements at the least cost.

2. Excluding the case of the Metropolitan District Railway, which, owing to its location and its suburban connections under the same ownership, has an exceptionally favourable position, and excluding also the case of a portion of the Metropolitan Railway, the through running of suburban trains from any existing railway system over any existing or authorised urban lines, available for movement from west to east, is obviously impracticable, and having regard to the provision already made for "tube" railways, it seems to me that the only course now practically open is to run on all the "tube" railways a constant service of trains, say at 2 minutes or $1\frac{1}{2}$ minute intervals, and to secure the best possible connections of suburban train services with the trains on the "tube" railways by interchange stations.

3. I think that the urban railways already authorised within the central area, with the addition of the proposed lines from Shepherd's Bush *via* Kensington to the City, and from Victoria to Marble Arch, will adequately provide for the public requirements, when these railways have been brought into full and convenient interchange connection with all the lines carrying suburban traffic to London, and that further expenditure on new railways within the central area with the object of providing for the through running of suburban trains would be a waste of capital. Schemes designed with that object, even if they might have been advantageously adopted in the past, ceased to be justifiable from the point of view of prudent expenditure of capital after the large expenditure on the "tube" railways now under construction was undertaken. It would, I think, be unfair to those who have subscribed or may subscribe the 30 millions of capital authorised in respect of the "tube" railways already constructed, under construction and authorised, if additional railways (except those above mentioned) were to be authorised within the central area, unless and until it should become apparent, after sufficient experience of the effect of the completion and working of the railways already authorised, that additional railways are needed. I doubt whether it will be necessary to spend any further capital on railway construction within the central area for a period so long as not to be within the limits of practical consideration at the present time.

GEORGE GIBB.

R E P O R T

TO THE KING'S MOST EXCELLENT MAJESTY,

BY

SIR GEORGE C. T. BARTLEY, K.C.B., M.P.

MAY IT PLEASE YOUR MAJESTY.

Although I agree with many of the smaller points raised in the Report, and recognise that some of the details recommended would be improvements, and should be adopted, I regret that I am unable to sign the Report. It does not seem to me to meet the great question involved, which, I think, cannot be effectually met by any number of small improvements. It does not, in my judgment, grasp the changes required in the facilities for locomotion in London, which a rapidly developing and growing system of social and business habits imperatively demand. I append some of my reasons.

GENERAL REASONS.

The general purport of the Report, as it seems to me, is an attempt to improve locomotion in London on the lines on which improvements have been made in the last two generations, and chiefly by relying on more tramways in the "West End" of London in the existing streets, many of which are very narrow. It is true that the widening of streets and the creation of new streets are referred to as, of course, important and desirable, but it is really left to be accomplished almost accidentally as in the past, and is not made the basis of all improvements. This, I cannot think, is a solution of the problem, and at best but a very temporary palliative. Where tramways already exist the congestion is often as bad, if not worse, than before they were made, as may be seen in many of the streets in the south and east of London. Though tramways afford good through accommodation, and should be extended wherever possible, as I subsequently point out, I am convinced that the remedy of simply extending tramways in no way meets the present grave difficulties.

From the evidence we have taken and the places we have visited, the conclusion that I have drawn is that the only effective solution for the congestion of the traffic in London, both vehicular and pedestrian, is the broadening of the streets and the creation of some new great thoroughfares. I consider that on this consideration the whole scheme of improvement should be based.

The streets have become quite incapable of accommodating the ever-increasing dimensions of the traffic, and, although the suggestions of the Report may temporarily alleviate the position of through travelling, they will, in my opinion, in themselves, in a very short time, considerably aggravate the congestion in the business centres rather than relieve it. While nothing can, of course, be permanent for all time, yet, with the facts we have before us, it is clear that the creation of some new great thoroughfares will provide what is needed for some generations.

It seems to me that locomotion is making now an advance, which, in relative extent, may be compared with that which took place when regular vehicular traffic began to be added to almost universal pedestrian and horse traffic. The statistics show that travelling is increasing at a very rapid rate : in 1881 it was estimated that about 270 millions of passengers were carried to and from London. The Advisory Board of Engineers estimate that now the number is about 1,164 millions, or that each resident in or near London makes 170 journeys each year. This, however, is only about half the amount

of travelling that goes on in New York, and much less than in Berlin, though both these cities are smaller than London, and it would seem that in the next decade, the increase will probably continue in a geometric ratio. This will render the congestion of the present streets, however carefully arranged and however equipped with tramways, absolutely unbearable, and the difficulty of improving them will increase in the same geometrical proportion the longer the real and only practical improvement of new and wider streets is delayed.

Further than this, it is clear that if the proposals in the Report are carried out, or even some of them, they will raise interests and cause impediments, and so make it still more difficult and costly hereafter to secure new great thoroughfares which, in my opinion, are so much needed.

The evidence seems therefore to me to point clearly to the fact that the only solution of the present difficulties in London locomotion is the bold one of facing the question of widening streets, and, above all, of at once creating at least two new broad avenues, one north and south crossing the river, and one east and west, as referred to by me in a later paragraph.

PROPOSALS OF THE REPORT.

Some of the chief proposals of the Report for improved communication are given in paragraphs 103 to 110. The Report recommends that tramways on five of the routes given, (1) the Euston and Marylebone Roads, (2) the Bayswater Road, (3) the Hammersmith Road, (4) the Fulham Road, (5) the King's Road—Chelsea, be taken in hand as soon as possible. The Report also considers that a subway starting from Victoria Station and running beneath Grosvenor Place and going for nearly a mile under Hyde Park is so important that it should be taken in hand with as little delay as possible. It even seems to suggest that if the public opinion would tolerate tramway lines on the surface, along the eastern edge of Hyde Park itself and thence down Grosvenor Place, they should be allowed.

The proposals for these various tramway routes no doubt would increase the facilities of through personal locomotion from the western suburbs through the "West End" of London. They, however, would tend, by bringing more traffic to London, to increase the congestion in these roads as well as in the north, south, or east, where congestion, in spite of tramways, is already at times very great. They would do nothing to facilitate vehicular traffic. Indeed it is certain that with the existing narrow roads they will render vehicular, other than tramway traffic, on which so much of the trade of London depends, more difficult and tedious. Again, I cannot in any way agree in the recommendation of a tramway in any part of the Park. As regards the subway, I am much afraid it would kill many of the older trees for a considerable distance on each side, and although the route might be convenient, much inquiry is necessary before it should be adopted. I hardly think a tramway along Grosvenor Place with a tunnel, and another tunnel either in Cumberland Place or Edgware Road, should be adopted without much further investigation.

These schemes and others are recommended by the Advisory Board of Engineers to which I refer later. They would provoke immense opposition: they would injure, or be thought to injure, the property in many districts; they would considerably cut up Hyde Park; and it seems to me, for the Commission to recommend these schemes, on the advice of three engineers, one of whom is an American, without taking ample evidence as to their effect, is at least premature. The cost of these schemes would be considerable. If the carrying them out would tend to solve the problem of London locomotion, more might be said for them, but as they could be at best but only inefficient, and very temporary and partial palliatives, I regret the Commission has so hastily adopted them, and advised their immediate commencement. I cannot concur in the recommendation. The proposal of broad avenues, already referred to by me, and gone into in greater detail later, would, I think, meet effectually most of the wants supplied by these proposals, with few, if any, of the objections I have referred to.

CONGESTION AT CROSSINGS.

There can be no doubt that the congestion at crossings is a great difficulty. The suggestions, however, of the Advisory Board of Engineers with reference to two crossings—paragraph 81—which they give, namely, Blackfriars and Piccadilly, seem to me to be most doubtful. It is true that the Commission does not commit itself to a definite recommendation, but they are printed in the Report and stated to be valuable. They can, I think, in no way be considered as desirable, or even can they be regarded as specimens of how similar difficulties which exist in so many places can be remedied.

To make a raised railway or tramway along Blackfriars Road and crossing Fleet Street at Ludgate Circus, would affect many interests and be very costly. The practical results of raised railways in New York and elsewhere are not encouraging. Also to make a road along the east side of St. James's Park, with subways under Piccadilly, under Devonshire House and Lansdowne House to Berkeley Square, together with a wide road on Constitution Hill, and a raised road at the Duke of York's Column, would very seriously injure, if not absolutely spoil, a great part of the most attractive portions of St. James's Park and the Green Park. It seems to me that any advantages to be derived by these changes would be altogether out of proportion to the injuries inflicted on the Parks.

Again, the indirect effect of two new main thoroughfares, which I have already referred to as the basis of locomotion reform in London, alone would very greatly relieve these and many other crossing places. They would draw off much of the heavy and much of the light traffic, and probably be found to render unnecessary such proposals, which in themselves would be very costly, and would give rise to immense opposition, even if the public would tolerate them.

BROAD AVENUES.

As I have already indicated, from the evidence it appears to me that the main principle of permanently improving the traffic arrangements of London lies in widening and enlarging the streets, and especially in forming one or two new broad thoroughfares, as has been done in the chief cities of the Continent. At least one is required to run north and south across the Thames, and the other east and west, north of the Thames. This improvement is specially important, as London possesses comparatively few alternative routes, and the necessity of facing the cost of at least two thoroughfares seems to me to have been established. If these were made 150 feet wide, with two lines of surface tramways, and subways for at least four lines of rails, practically all the great cause of congestion would be materially relieved, if not done away with, and the traffic, both pedestrian and vehicular, relieved all over the London area, both now and for many years to come. The subway in the broad avenues would also be connected by subways for electric tramways with all the main lines of railway to London, and in this way a continuous route would be made from all parts round London direct to the centre without passengers being required to go into the streets at all.

Another important point to consider in the construction of such new streets is the fact that the existing routes, which are more or less parallel to the proposed new thoroughfares, would act as alternative routes. They would be relieved of the great bulk of the heavy traffic, and alternative routes to all the chief parts of London, which are found in American cities to be such an advantage, would, to a certain extent, be secured in London.

The cost of these new broad avenues is, of course, the great consideration. It seems to me, however, bearing in mind the "recoupment" of the cost of such schemes as the Strand and Holborn improvement, that it is possible, and has to a great extent been made out as practicable, that this need not be so formidable as at first sight appears. By purchasing a strip of land on each side of these avenues at its present value, with due compensation for compulsory purchase, and selling it or letting it when the avenue is completed, when it would be far more valuable, the ultimate net cost would not be so serious. In the Strand and Holborn improvement, the gross cost of about

£7,780,000 a mile was reduced in this way to about £1,300,000 a mile. A further means of meeting the cost would be found in the receipts from the lines of surface and subway tramways. The twenty miles of broad avenue would contain sixty miles of double rail of tramways, connecting, as already stated, most of the railways, and running near to and from the centre of the Metropolis. The profit on these lines, if commercially worked, would probably be from three thousand to five thousand pounds per mile per annum, a sum that would go a long way toward the cost of constructing the avenues. In this way it might even indeed ultimately be that the cost of these great and permanent improvements would be comparatively inconsiderable.

The direct and indirect saving to the trade and business in London in time alone, which usually means money, which such facilities in locomotion, both pedestrian and vehicular, would secure, is almost impossible to exaggerate. The Commission has necessarily not gone into the detailed cost of these suggestions, nor into the cost of the various changes which it itself recommends. From, however, what information we had, I am disposed to think that it is possible the cost of these two broad avenues would not be considerably, if any, more than the cost of the various palliative remedies which the Commission recommends to be entered into at once.

Before anything is done in this matter, careful estimates would, of course, have to be made of the cost of such proposals. Whatever the ultimate net cost would be, such an expenditure would render London suitable, in a way none of the recommendations of the Report could secure, for several generations, for the traffic which its enormously growing business requirements demand.

PROPOSED TRAFFIC BOARD.

I agree in the formation of a Traffic Board formed mainly on the lines of the Report, before whom all matters connected with London traffic should be brought. The Board should examine into all schemes, and should report to Parliament annually, and on specific Bills, it being clearly understood that it merely recommended and in no way did away with or limited the action of Parliament. If such a Board were created, and obtained the confidence of the public, I believe its influence on Parliamentary Committees would be great, and the sifting of all schemes, and their gradual assimilation, to one comprehensive plan for London and "Greater London," as a whole, would be most valuable in the interests of locomotion.

It seems to me the Commission would have done well to have reported last year simply on the subject of this tribunal, and to have recommended its immediate establishment. The Commission could then have left to the consideration of this permanent tribunal the details of the questions which have been gone into, in my opinion, too hastily by the Advisory Board of Engineers.

THE ADVISORY BOARD OF ENGINEERS.

As I have already stated, I cannot approve of the action that was taken in forming the Advisory Board of Engineers, nor do I think the Commission is in a position either to accept or reject their recommendations. The Board consisted of three eminent engineers, one being an American, and though their report is useful, and enters into many matters well worthy of careful attention, it does not, I think, profess to be more than the individual opinions of these gentlemen. Every main suggestion for routes of tramlines, etc., which it makes would require to be most carefully examined into with witnesses before it could be adopted.

The report of the Advisory Board of Engineers covers an enormous area, and was necessarily hurriedly produced in a few months. Having been prepared, it should be placed, I think, before any permanent tribunal that may be appointed for that body to investigate, but I cannot think the Commission is in a position to pronounce definitely on the proposals which their report contains.

COST EXPENDED FROM THE RATES ON LONDON IMPROVEMENT.

The amount applied to the improvement of London streets from the rates during the last 50 years has amounted to about £325,000 a year,

or about 2d. in the pound, and about double that sum during the last 15 years. This seems to be hardly commensurate with the increase of the wealth and prosperity of London and its suburbs during that period. The rates are no doubt high and growing regularly, but the above fact makes it clear that this has not been brought about by excessive expenditure in the promotion of street and other improvements for locomotion at the public cost. It is difficult, as the Report states, to show the loss in cash caused by the present congestion, but it must amount to a very large sum, and this should reasonably be set off against the outlay in improved streets and facilities for locomotion. As I have already stated, I think that the bolder plan of facing the creation of at least two new thoroughfares may ultimately be found to be less costly to the ratepayers than the various comparatively smaller matters which are recommended in the Report, and for which there would be little or no "recoupment" possible.

TRAMWAYS.

The general purport of the Report seems to me to urge the great extension of tramways, and especially in the "West End" of London. From the evidence of many places I am strongly convinced of the importance of tramways on roads of sufficient width, but from the experience of London and Continental cities, built on the plan of London, and not on the plan of New York with parallel streets, I am of opinion that tramways, on the surface in narrow business streets, rather augment the congestion than relieve it, and certainly seriously injure trade in those thoroughfares.

In busy trading streets, in addition to the moving traffic, a considerable number of conveyances are continually stopping at places of business, and indeed, must do so. However careful the regulations are to prevent vans, etc., from stopping too long, the very essence of a trading street must be for vans and other conveyances to be continually stopping at places of business to receive and deliver goods. Tramcars running through very narrow streets, where carts cannot stand as they pass, must almost destroy the trade of the street. If there is width enough for a cart to stand, but for nothing to get through when it is so standing while the tramcar is passing, great damage must also be done to the trade of the street. In Boston this was found to be so serious that the tramcars were removed from the surface, and put in a shallow subway in the main trading streets.

The Report of the Commission contemplates the immediate creation of lines of tramways in many streets, especially in the "West End" of London, and even before these streets are widened. To this I cannot agree. I think it is only necessary to visit many of the streets where tramways do now exist in London to show that congestion has not been reduced but increased by them. This is borne out by the experience of Berlin, Cologne and other cities. I therefore dissent from this part of the Report of the Commission, and think that unless trading roads are, or can be made, wide enough for at least two lines of vehicular traffic on either side of the tramcars, tramways should not be allowed. Here again I must add that, in my judgment, if the two main thoroughfares were made as I suggest with at least six lines of tramways and subways, the need of many of the tramways suggested would be done away with.

PROFITS ON TRAMWAYS.

In paragraph 91 it appears to be assumed that there is universally a profit on tramways. This is an important point in connection with the great extension of tramways which the Report suggests, and which are to be practically carried out in London by the London County Council. From the evidence given, however, by the London County Council, I cannot myself feel that this assumption is established. It is clear that the municipality should obtain some profit from any company if a monopoly is given to that company for the use of the streets for tramways. If the municipality builds and carries on the tramways, it should get the whole profit. On the other hand, the experience of most Continental and American cities shows conclusively that greater profit is obtained by the municipality when it lets out on rental or at some other form of charge for terms of years, the

right to run the trainways to a private company. This also does away with the enormous increase in the staff and employees of the municipality. I regret that the Report does not recommend that this mode of working tramways should be made compulsory.

RAILWAYS.

The recommendations and statements concerning the railways in and about London may be found to be desirable, but many of them do not seem to me to be supported by evidence that has been laid before us. Some of the schemes will need to be most carefully considered and investigated before they are adopted, and to not a few of the schemes I object, because they appear to me likely to retard and render more difficult and costly the securing of the new broad avenues I have so often referred to. I dissent altogether from the recommendation that municipal authorities are to be authorised to subsidise railway companies in order to assist to build them and to establish services of trains—paragraph 150—which the companies find or believe to be unremunerative. Such a system would add to the already heavy local burdens, might lead to great corruption and land speculation, and is altogether unnecessary. If there is any chance of a service of trains becoming remunerative, railway companies will, as they have in the past, not be slow to develop it. If, however, experiments are to be made out of the rates on doubtful routes, the cost will be heavy, and a great additional charge will be, I fear, permanently placed on the community, as most of the speculations will prove unsuccessful. I object altogether to the idea that any part of the cost of locomotion shall be put on the public; it should be borne entirely by the industries requiring the labour in the shape of wages.

ARTISANS' DWELLINGS.

I cannot approve of the recommendation in the Report on this branch of the subject, and I think the Report goes beyond the reference in this matter. I do not think the Commission have sufficiently investigated the financial position of the various housing schemes to be able to give any opinion as to which are, or are not, self-supporting (par. 13). The "housing question" is no doubt indirectly affected to a very important extent by locomotion. It seems, however, to me as not reasonable or politic for the rates to supplement either the tramways or the housing. For persons requiring to live in cities, the cost of their extra lodging should be borne, not by the community, but by the industry or trade which necessitates their place of abode, and supplied in the shape of either rooms or extra wages. The cost also of the travelling of persons living outside and coming daily to London must also be part of the cost of the trade or industry of such persons, and must also be part of their wages or salaries. I must protest against the idea which the Report seems to convey, that it is impossible to provide housing for the people without financial assistance from the rates unless financial assistance is given by the rates for reducing the cost of locomotion to the suburbs.

THE EFFECT OF MOTOR OMNIBUSES ON TRAMWAYS.

The Report seems to suggest that motor omnibuses will not take the place of tramways as a means of popular locomotion. This may be so, but the evidence does not appear to be conclusive either way, though tending rather in favour of motor omnibuses than the reverse. That motor omnibuses are quicker than tramway cars in crowded streets has been ascertained; that they are better in narrow streets can hardly be doubted; and it would appear to be unwise to prophesy what they may ultimately accomplish, seeing what they have already done in so short a time. Whether they will ultimately compete successfully with tramways is at least an open question, but it seems to me to be sufficiently doubtful to render it scarcely wise to extend tramways in narrow streets, at a great cost to the public, until more experience has at least been gained as to the future of motor omnibuses.

THE BREAKING UP OF THE STREETS.

No doubt this is now a source of immense inconvenience and loss, and should be lessened. The regulations suggested, however, will, I fear, be

easier in theory than in practice. The very fact that the roads are so crowded necessitates a greater amount of repair, and as in so few places comparatively good alternate routes exist, no rules will ever really meet the difficulty. With the creation of new broad avenues, however, this inconvenience would largely disappear. The pipes and wires would be placed in the subways of these broad avenues, and repairs and the breaking up of broad thoroughfares are not so inconvenient as in congested narrow streets.

SLOW TRAFFIC ALONG THE KERB.

I cannot think that in our present crowded streets it is possible practically to enforce a rule that the slow traffic shall keep along the kerb. No doubt it would be desirable. As, however, in every few yards a vehicle is often standing at a place of business, such a rule, if enforced, would in many trading streets involve the slow and heavy traffic continually going in and out many times in each street, and require the horses to drag the heavy carts and vans up and down the slope of the road, which is often considerable. In the broad roads and new avenues it seems to me that heavy traffic might be confined to the second row to great advantage.

STANDING OF VEHICLES AT THE SIDES OF THE STREETS AND THE WAITING OF CARRIAGES.

I agree that steps are necessary to limit the standing of vehicles at places of business, and especially to secure all possible improvement in rebuilding, so that railway and other companies with many carts shall have their own private loading yards. I fear, however, that the too drastic and complicated rules proposed, if enforced would much hamper, if not destroy, trade in many streets. It must be borne in mind that the bulk of traffic is caused by trade, and this is to be encouraged and increased, and not hampered. Here again the new broad avenues would afford the necessary accommodation for traffic, while leaving the streets freer for the trade to be carried on in them without injury to ordinary locomotion and through vehicular traffic.

THE LOCAL "VETO."

Under the present system each Metropolitan Borough, the London County Council, and the City, have a "veto," which empowers each of them, not only to object to a tramway coming into its area, but enables each authority to prevent, without its formal consent, Parliament from even considering any proposed line of tramway.

It seems to me that this "veto" should be absolutely abolished. It is difficult to understand how Parliament has allowed it to grow up, and has surrendered its own right to consider any and every proposal that is formally brought before it.

I cannot approve of this recommendation of the Commission, however, on this matter. It practically only does away with the "veto" of each Metropolitan Borough. It allows the London County Council and the City to prevent any scheme going before Parliament, if either of these bodies is willing to undertake itself to carry out the proposal. That is to say: any proposed scheme which may be brought forward can be stopped as far as the proposer is concerned, if either the London County Council or the City Corporation say they will undertake the scheme themselves.

The result of this will be that proposals will rarely be made, and the London County Council and the City will practically hold the "veto" in an even more objectionable form than before, while the boroughs who are specially interested will have their "veto" taken away. If it acts at all in promoting an extension of tramways, it will do so by directly encouraging the City and the London County Council themselves to embark on them whether they consider they are likely to be profitable or not, in order to keep out any private enterprise. I strongly object to this arrangement.

It seems to me that every bona-fide proposal should have a right to be considered by Parliament. The only restriction I would put upon it is, that if a Traffic Board be established, as proposed by the Commission, the Traffic Board should have the right of reporting to Parliament in the first instance on each particular scheme.

The general conclusions which I would wish to emphasise, especially those in which I am not in harmony with the Report, are as follows :—

(a) That the present congestion in London, and the probable increase in that congestion in the immediate future, cannot be satisfactorily met by the proposals of the Commission, which will at best only temporarily relieve it.

(b) That in the very near future the growth of traffic will far exceed any additional facilities proposed in the Report.

(c) That any general scheme for duly supplying the urgent need of London should include the creation of at least one Main Avenue east and west, and one north and south crossing the Thames, as the only means of practically and effectually meeting the requirements of present trade and relieving the growing congestion of London as regards pedestrian, vehicular and cross traffic.

(d) That tramways be extended in trading streets where such streets are wide enough, or are made wide enough, for at least two lines of conveyances to pass easily on either side of the tramcars.

(e) That tramways and other means of locomotion be worked by private enterprise by lease or otherwise from the municipal authority, and not directly by the municipality.

(f) That no local authority should possess any "veto" by which it has the power of preventing Parliament from considering any scheme of London locomotion.

(g) That with a view to facilitate the widening of streets power be given to localities to acquire the necessary land in a simple and expeditious and inexpensive manner, but with due compensation to all private interests.

(h) That it be recognised that in all schemes of locomotion no part of the cost shall fall on the rates, but that the fares shall be such as to secure at least a self-supporting system.

(i) That a Traffic Board, generally as recommended in the Report, should be at once established.

(j) That this Traffic Board should investigate all schemes for locomotion in London, and report on them to Parliament.

(k) That this Traffic Board should regard all proposals in connection with, and as part of, one whole general and harmonious scheme for the entire area of greater London.

I should like to express my grateful and hearty thanks to the assistance I have received during the work of the Commission, and in America and on the Continent, from the Secretary to the Commission, Mr. Lynden Macassey, M.A., B.Sc., LL.D. : his knowledge as an engineer, and his acquaintance with railway economics, has been of the greatest use, and has always, I have felt, been placed most freely at my disposal in the work of the Commission.

All which is humbly submitted for Your Majesty's consideration.

GEORGE C. T. BARTLEY.

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ABBREVIATIONS.

A.C.L. = Administration County of London.
B.T. = Board of Trade.
L.C.C. = London County Council.
L.G.C. = Local Government Board.
U.D.C. = Urban District Council.

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